THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

FISH BULLETIN No. 121

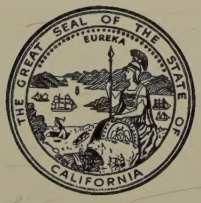
THE CALIFORNIA MARINE FISH CATCH FOR 1961

BY THE BIOSTATISTICAL SECTION
MARINE RESOURCES OPERATIONS

and

Catch Localities for Dover Sole, *Microstomus pacificus* (Lockington), Landed in California, 1950 through 1959

By E. A. BEST



1963

MAP OF
CALIFORNIA
SHOWING
STATISTICAL AREAS
N
Crescent City
DEL NORTE
DEL NORTE
AND
EUREKA
AREA
Eureka
HUMBOLDT
MENDOCINO
Ft. Bragg
SACRAMENTO
AREA
LAKE
SONOMA
SAN FRANCISCO
AREA
MARIN
Pittsburg
San Francisco
SAN MATEO
SANTA CRUZ
MONTEREY
AREA
Monterey
MONTEREY
SANTA BARBARA
AREA
SAN LUIS OBISPO
SANTA BARBARA
VENTURA
LOS ANGELES
Santa Barbara
LOS ANGELES AREA
San Pedro
ORANGE
Newport
SAN DIEGO AREA
SAN DIEGO
San Diego

FIGURE 1

TABLE OF CONTENTS

	Page
California Marine Fish Catch for 1961	
Foreword	5
Explanation of Tables	7
Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1961 Catch	9
Annual Landings and Shipments (Figure 2)	10
Annual Landings and Shipments, 1916 through 1961	11
Landings and Shipments of Leading Species Ranked by Pounds and Value	12
Licensed Commercial Fishermen	13
Number of Fishing Boats by Length	13
Origin of Shipments, 1961	14
Origin of Commercial Fish Landings, 1961	15
Monthly Landings and Shipments, 1961—Statewide	17
Monthly Landings and Shipments, 1961—by Areas	20
Value and Poundage, Annual Landings by Areas, 1961	33
Value of Landings by Ports and Areas, 1961	36
Historical Sport Catch, 1936-1940, 1947-1961	45
Live Bait Catch, 1961	47
Catch Localities for Dover Sole, *Microstomus pacificus* (Lockington), Landed in California, 1950 through 1959	48

FOREWORD

Catch Bulletins provide records of California's commercial fisheries and their value to fishermen. They also summarize the marine party boat anglers' sport catch.

This report for 1961 is the 21st in the series. Prior records have been published regularly beginning with those for 1926 and 1927. In recent years, a need for faster publication of catch statistics has made it desirable to publish annually instead of biennially.

There has been a change in the title of the bulletin series from *The Marine Fish Catch of California* to *The California Marine Fish Catch.*

Each wholesale fish dealer or processor completes a record in quadruplicate of all fish received. The triplicate copy of these receipts is sent to the Department of Fish and Game. Party-boat operators record each trip's catch and these records are also sent to the Department. These data are edited and subsequently processed by electric accounting machines.

Published figures are of national and international concern, but they are used primarily by fisheries scientists and legislators to manage and regulate California's important fisheries. Chambers of commerce, members of the fishing industry, educators, and others also find the catch statistics of value in meeting their respective needs.

2—82102

EXPLANATION OF TABLES

The tables of this bulletin summarize the final 1961 records of fish mollusks, and crustaceans landed by the commercial fishing fleet in California. Records of fish caught by party-boat anglers or used for live bait are also summarized.

The tables also record imports from other states or foreign countries that are destined for processing; however, fish shipped into California to be sold in a fresh state are not recorded.

Annual landings and shipments into California are shown in Table 2 and Figure 2. Weights given are totals of all species landed or imported including deliveries to sardine reduction ships from 1930 to 1938.

The 20 leading species landed and shipped into California are ranked according to pounds and value for 1960 and 1961 in Table 3. Poundages of landings and shipments of each species for 1961 are recorded in Tables 6 to 14.

The value for each variety has been computed from prices paid to the fishermen. These are minimal values, less than wholesale, and do not reflect costs of trucking, unloading, ice, or other items. When the price paid for an individual landing is unspecified, we use the average price for that variety in that area. Tables 15 to 21 show values of each variety landed in the state by each port area.

Species caught and landed in California during 1961 are listed in Table 1, both common and scientific names are given. Some varieties are reported collectively when, for economic or other reasons, dealers are unable to provide a specific separation. For example silver and king salmon are combined as salmon because the price is based on size; for this reason, the dealers do not distinguish species.

Animal food is reported as a separate category for the first time. This grouping consists of trawl-caught fish. In prior years, dealers attempted to separate animal food landings by species. Sampling conducted by the Department's Bottomfish Investigation during 1961 showed the species composition of animal food was:

Species	*Percent*
Sablefish	28
Arrowtooth flounder	27
Rockfish	13
Pacific hake	12
Dover sole	7
Rex sole	5
English sole	2
30 other species	6
	100

In California, almost all fish and shellfish are landed in a round condition, an exception is salmon which is nearly always eviscerated before landing. However, the condition of fish landed by fishermen cannot always be determined, thus, landing figures are tabulated as reported to the Department's Biostatistical Unit, irrespective of condition.

When landings are reported by units of measure other than pounds, appropriate conversion factors are used to equate them to pounds. Conversion factors are determined periodically by sampling the landings at delivery points. Current conversion factors applied to eight important mollusks and crustaceans when not reported by pounds are:

Abalone, red	50 lbs. per doz.
Abalone, pink	25 lbs. per doz.
Abalone, green	35 lbs. per doz.
Clams, Mexican Pismo	8 lbs. round wt. per 1 lb. cleaned wt.
Clams, Washington	7 lbs. per doz.
Crab, market	2 lbs. each
Oyster, eastern	30 lbs. per 100 oysters
Oyster, giant Pacific	50 lbs. per 100 oysters

Table 22 summarizes the party-boat angler catch from 1936 to 1961, excluding World War II years. The annual catch of the more important sport species together with the total effort expended by party-boat sport fishermen are presented. Total effort for 1960 and 1961 is reported as number of anglers; prior to 1960, angler days were used to measure total effort.

The estimated catch of live bait for ocean sport fishing is given in Table 23. These data are based on the reported catches of 14 boats.

The numbers of fishermen licensed for commercial fishing in California are given by area of residence in Table 4. The sizes of the registered fishing boats of the commercial fleet are listed in Table 5.

TABLE 1

Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1961 Catch

Common name	Scientific name
FISHES	
Anchovy	*Engraulis mordax*
Barracuda, California	*Sphyraena argentea*
Bass, rock	
Kelp bass	*Paralabrax clathratus*
Sand bass	*Paralabrax nebulifer*
Bonito, Pacific	*Sarda chiliensis*
Cabezon	*Scorpaenichthys marmoratus*
Cabrilla, spotted	*Epinephelus analogus*
Carp	*Cyprinus carpio*
Croaker, white	*Genyonemus lineatus*
Small amounts of queenfish	*Seriphus politus*
Flounder	
Starry flounder	*Platichthys stellatus*
Small amounts of other flatfishes	
Flounder, arrowtooth	*Atheresthes stomias*
Flyingfish	*Cypselurus* sp.
Greenling, kelp	*Hexagrammos decagrammus*
Grouper	*Mycteroperca* sp.
Hake, Pacific	*Merluccius productus*
Halfmoon	*Medialuna californiensis*
Halibut, California	*Paralichthys californicus*
Halibut, Pacific	*Hippoglossus stenolepis*
Hardhead	
Sacramento blackfish	*Orthodon microlepidotus*
Hardhead	*Mylopharodon conocephalus*
Herring, Pacific	*Clupea pallasii*
Lingcod	*Ophiodon elongatus*
Mackerel, jack	*Trachurus symmetricus*
Mackerel, Pacific	*Scomber diego*
Opaleye	*Girella nigricans*
Perch	Members of family Embiotocidae
Pompano, Pacific	*Palometa simillima*
Rockfish	All species of *Sebastodes* and *Sebastolobus*
Sablefish	*Anoplopoma fimbria*
Salmon	
King	*Oncorhynchus tshawytscha*
Silver	*Oncorhynchus kisutch*
Sanddab	*Citharichthys sordidus*
Sardine	*Sardinops caerulea*
Sculpin	*Scorpaena guttata*
Sea bass, giant	*Stereolepis gigas*
Seabass, white	*Cynoscion nobilis*
Shad	*Alosa sapidissima*
Shark	
Basking	*Cetorhinus maximus*
Bonito	*Isurus glaucus*
Dogfish	*Squalus acanthias*
Leopard	*Triakis semifasciata*
Soupfin	*Galeorhinus zyopterus*
Thresher	*Alopias vulpinus*
Varying amounts of others	
Sheephead, California	*Pimelometopon pulchrum*
Sierra	*Scomberomorus sierra*
Skate	
Big	*Raja binoculata*
California	*Raja inornata*
Longnose	*Raja rhina*
Smelt	
Grunion	*Leuresthes tenuis*
Jacksmelt	*Atherinopsis californiensis*
Surf	*Hypomesus pretiosus*
Topsmelt	*Atherinops affinis*
Smelt, whitebait	*Allosmerus elongatus* *Spirinchus starksi* Young of several others
Sole	
Dover	*Microstomus pacificus*
English	*Parophrys vetulus*
Petrale	*Eopsetta jordani*
Rex	*Glyptocephalus zachirus*
Sand	*Psettichthys melanostictus*
Varying amounts of others	
Splittail	*Pogonichthys macrolepidotus*
Steelhead	*Salmo gairdneri*
Sturgeon	*Acipenser* sp.
Swordfish	*Xiphias gladius*
Tuna	
Albacore	*Thunnus alalunga*
Bigeye	*Thunnus obesus*
Bluefin	*Thunnus thynnus*
Oriental	*Thunnus orientalis*
Skipjack	*Katsuwonus pelamis*
Yellowfin	*Thunnus albacares*
Turbot	
Curlfin	*Pleuronichthys decurrens*
Diamond	*Hypsopsetta guttulata*
Hornyhead	*Pleuronichthys verticalis*
Small amounts of others	
Wahoo	*Acanthocybium solandri*
Whitefish, ocean	*Caulolatilus princeps*
Yellowtail, California	*Seriola dorsalis*
CRUSTACEANS	
Crab, market	*Cancer magister*
Crab, rock	*Cancer productus*
	Cancer antennarius
	Cancer anthonyi
Lobster, spiny	*Panulirus interruptus*
Shrimp, bay	*Crago franciscorum*
	Crago nigricauda
Shrimp, ocean	*Pandalus jordani*
Small amounts of others	
MOLLUSKS	
Abalone	
Pink	*Haliotis corrugata*
Red	*Haliotis rufescens*
Green	*Haliotis fulgens*
White	*Haliotis sorenseni*
Clam	
Gaper	*Tresus nuttalli*
Jackknife	*Tagelus californianus*
Clam—continued	
Pismo	*Tivela stultorum*
Washington	*Saxidomus nuttalli*
Octopus	*Paroctopus appollyon*
Mussel	*Mytilus* sp.
Oyster	
Eastern	*Crassostrea virginica*
Giant Pacific	*Crassostrea gigas*
Squid	*Loligo opalescens*

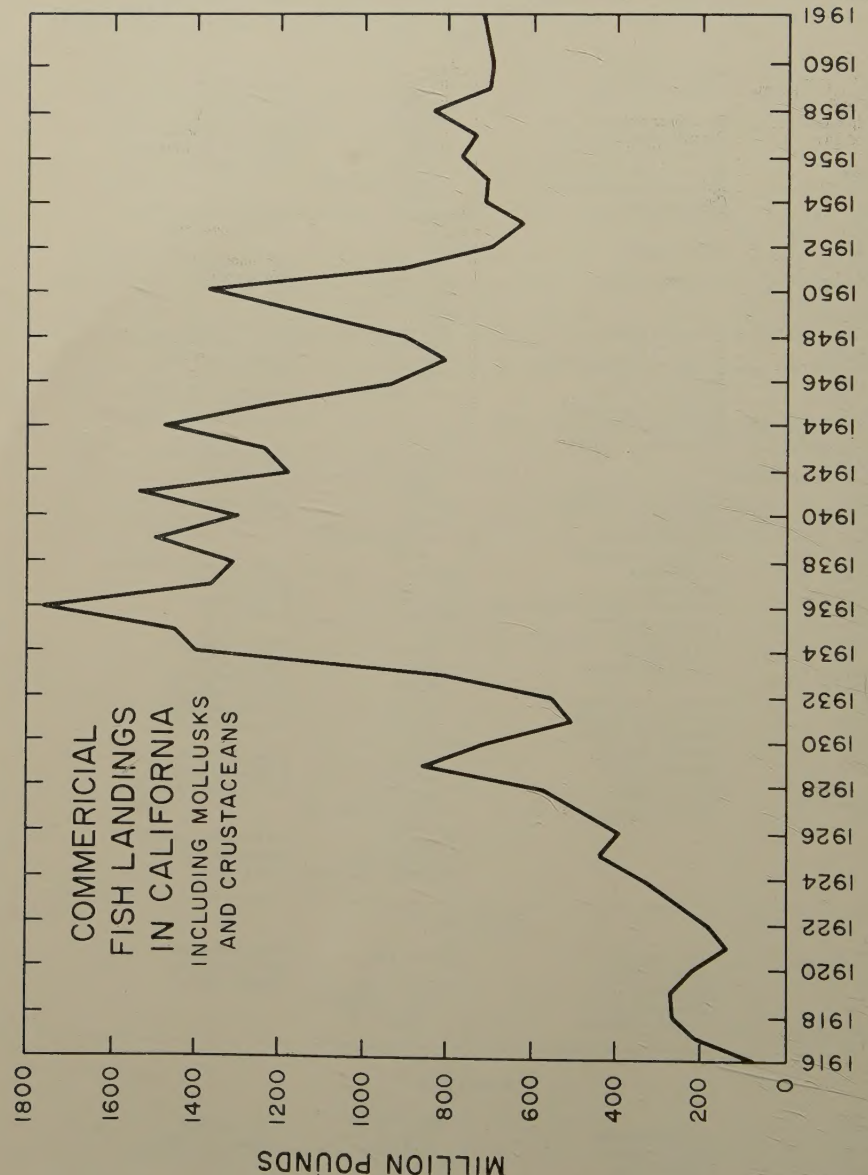


FIGURE 2. Total annual landings and shipments into California. Includes sardine deliveries to reduction ships 1930-38. See Table 2.

TABLE 2

Total Annual Landings and Shipments Into California of Commercial Fish, Mollusks, and Crustaceans, Includes Sardine Deliveries to Reduction Ships During 1930 Through 1938

Year	Thousands of pounds	Year	Thousands of pounds
1916	95,003	1941	1,529,148
1917	209,877	1942	1,173,414
1918	261,134	1943	1,234,049
1919	266,270	1944	1,459,446
1920	222,004	1945	1,216,467
1921	135,348	1946	919,850
1922	182,343	1947	795,499
1923	253,875	1948	900,540
1924	340,446	1949	1,135,325
1925	437,502	1950	1,366,596
1926	394,964	1951	904,088
1927	487,166	1952	694,977
1928	583,527	1953	618,899
1929	856,854	1954	713,406
1930	702,189	1955	710,714
1931	502,390	1956	772,549
1932	556,139	1957	738,550
1933	821,805	1958	832,919
1934	1,390,799	1959	713,491
1935	1,448,017	1960	694,663
1936	1,764,900	1961	725,253
1937	1,362,984		
1938	1,310,596		
1939	1,486,535		
1940	1,297,517		

TABLE 3

Landings and Shipments of Leading Species Ranked by Pounds and Value

1960					1961				
Species	Thousands of pounds	Rank	Thousands of dollars	Rank	Species	Thousands of pounds	Rank	Thousands of dollars	Rank
Yellowfin tuna	272,648	1	$35,143	1	Yellowfin tuna	262,310	1	$35,036	1
Jack mackerel	74,945	2	1,582	7	Jack mackerel	97,606	2	2,029	6
Skipjack	74,799	3	7,896	3	Skipjack	86,748	3	9,536	3
Albacore	71,452	4	11,355	2	Albacore	59,414	4	10,310	2
Sardine	57,533	5	1,186	8	Pacific mackerel	44,110	5	954	9
Pacific mackerel	36,809	6	757	9	Sardine	43,169	6	1,146	8
Market crab	14,876	7	2,517	5	Bluefin tuna	22,004	7	2,855	5
Rockfish	13,714	8	672	10	Market crab	11,711	8	1,981	7
Bluefin tuna	13,180	9	1,633	6	Rockfish	10,831	9	587	11
Giant Pacific oyster	10,687	10	288	13	Squid	10,286	10	231	16
Dover sole	9,185	11	521	11	Giant Pacific oyster	10,047	11	291	14
Salmon	6,506	12	3,510	4	Salmon	8,992	12	4,927	4
Anchovy	5,059	13	74	18	Pacific bonito	8,513	13	218	17
Abalone	4,266	14	496	12	Dover sole	7,827	14	457	12
Sablefish	2,910	15	227	15	Anchovy	7,712	15	110	19
Squid	2,561	16	72	19	Abalone	4,554	16	607	10
Petrale sole	2,476	17	286	14	Miscellaneous (animal food)	3,777	17	75	20
English sole	2,375	18	164	17	English sole	3,646	18	261	15
Ocean shrimp	2,027	19	203	16	Petrale sole	3,391	19	389	13
Pacific herring	1,801	20	44	20	Sablefish	2,030	20	176	18
All others	14,854		1,712		All others	16,575		2,038	
Totals	**694,663**		**$70,338**		**Totals**	**725,253**		**$74,214**	

TABLE 4

Licensed Commercial Fishermen

Area of residence	Number of fishermen by season[1]	
	1960-1961	1961-1962
Eureka	1,126	1,321
Sacramento	91	128
San Francisco	1,185	1,229
Monterey	677	696
Santa Barbara	566	627
Los Angeles	2,190	2,287
San Diego	1,506	1,589
Alaska, Washington and Oregon fishermen licensed in California	565	500
Mexican nationals licensed in California	22	43
Other registry	23	14
Totals	**7,951**	**8,434**

[1] The season is from April 1 to March 31.

TABLE 5

Number of Fishing Boats by Length

Season[1]	Up to 24 feet	25 to 39 feet	40 to 64 feet	65 to 84 feet	85 to 99 feet	100 feet and over	Total
1960-1961	694	1,620	1,052	135	48	100	3,649[2]
1961-1962	830	1,725	1,048	123	44	102	3,872[3]

[1] The season is from April 1 to March 31.
[2] The owners of 530 boats were issued fishing party licenses in 1960-61.
[3] The owners of 544 boats were issued fishing party licenses in 1961-62.

TABLE 6

Origin of Shipments of Fresh Fish Into California During 1961

Shipped from: Species	Pounds shipped to each area				Total pounds
	Eureka	San Francisco	Los Angeles	San Diego	
Continental United States:					
Salmon	----	----	24,145	----	24,145
Shad	----	7,780	2,700	----	10,480
Sturgeon	----	----	18,260	----	18,260
Sucker	----	----	166,440	----	166,440
Oregon, Washington, Canada and Alaska:					
Halibut, Pacific	----	----	6,840	----	6,840
Sablefish	----	----	246,054	----	246,054
Salmon	1,111	----	328,422	----	329,533
Shad	----	5,989	129,299	----	135,288
Smelt	----	----	4,080	----	4,080
Steelhead	----	----	1,563	----	1,563
Sturgeon	----	----	16,229	----	16,229
Miscellaneous	----	----	48,590	----	48,590
Mexico and Central America:					
White, seabass	----	----	2,776	----	2,776
Shark	----	----	42,679	----	42,679
Tuna, albacore	----	378,220	3,216,092	----	3,594,312
Tuna, bluefin	----	----	428,592	75,650	504,242
Tuna, skipjack	----	----	850,442	3,074,404	3,924,846
Tuna, yellowfin	----	142,310	4,899,395	3,874,238	8,915,943
Mollusk:					
Clam, jackknife	----	----	----	242	242
Clam, Pismo	----	----	940,400	----	940,400
Mussel	----	----	----	2,442	2,442
South America:					
Tuna, albacore	----	23,330	----	----	23,330
Tuna, skipjack	----	----	6,395,517	10,185,523	16,581,040
Tuna, yellowfin	----	----	890,002	7,114,113	8,004,115
Japan:					
Sablefish	----	----	168,000	----	168,000
Tuna, albacore	----	2,437,510	22,427,515	1,626,945	26,491,970
Tuna, bigeye	----	182,480	278,916	----	461,396
Tuna, oriental	----	90,190	60,725	----	150,915
Tuna, skipjack	----	174,370	664,516	----	838,886
Tuna, yellowfin	----	16,758,125	32,581,371	2,244,749	51,584,245
Australia:					
Tuna, bluefin	----	514,970	102,413	----	617,383
China (Formosa):					
Tuna, albacore	----	62,730	----	----	62,730
Tuna, yellowfin	----	499,344	489,546	----	988,890
Africa:					
Tuna, albacore	----	118,665	----	----	118,665
Tuna, yellowfin	----	963,013	----	----	963,013
Total pounds	**1,111**	**22,359,026**	**75,431,519**	**28,198,306**	**125,989,962**

TABLE 7

Origin of Commercial Fish Landings and Shipments Into California During 1961

Species	Landings from				Shipments[1]	Grand total
	California waters	Waters north of State	Waters south of State	Total pounds		
Fish:						
Anchovy	7,711,573	----	----	7,711,573	----	7,711,573
Barracuda, California	478,362	----	231,017	709,379	----	709,379
Bonito, Pacific	8,439,400	----	73,572	8,512,972	----	8,512,972
Cabezon	4,952	----	----	4,952	----	4,952
Cabrilla, spotted	----	----	11,071	11,071	----	11,071
Carp	338,550	----	----	338,550	----	338,550
Croaker, white	889,164	----	----	889,164	----	889,164
Flounder	295,598	19,739	----	315,337	----	315,337
Flounder, arrowtooth	60,659	----	----	60,659	----	60,659
Flyingfish	32,802	----	----	32,802	----	32,802
Greenling, kelp	881	----	----	881	----	881
Grouper	----	----	202,271	202,271	----	202,271
Hake, Pacific	3,275	----	----	3,275	----	3,275
Halfmoon	5,907	----	----	5,907	----	5,907
Halibut, California	545,472	----	109,082	654,554	----	654,554
Halibut, Pacific	3,947	14	----	3,961	6,840	10,801
Hardhead	99,266	----	----	99,266	----	99,266
Herring, Pacific	1,401,248	----	----	1,401,248	----	1,401,248
Lingcod	1,361,726	78,217	----	1,439,943	----	1,439,943
Mackerel, jack	97,606,304	----	----	97,606,304	----	97,606,304
Mackerel, Pacific	44,110,194	----	----	44,110,194	----	44,110,194
Opaleye	2,337	----	----	2,337	----	2,337
Perch	118,245	----	----	118,245	----	118,245
Pompano, Pacific	11,265	----	160	11,425	----	11,425
Rock bass	----	----	2,584	2,584	----	2,584
Rockfish	10,324,292	166,728	339,742	10,830,762	----	10,830,762
Sablefish	1,562,897	53,531	100	1,616,528	414,054	2,030,582
Salmon	8,637,907	----	----	8,637,907	353,678	8,991,585
Sanddab	558,057	4,907	----	562,964	----	562,964
Sardine	43,169,064	----	----	43,169,064	----	43,169,064
Sculpin	26,718	----	----	26,718	----	26,718
Sea bass, giant	12,509	----	327,854	340,363	----	340,363
Seabass, white	458,491	----	235,733	694,224	2,776	697,000
Shad	----	----	----	----	145,768	145,768
Shark	610,122	----	13,850	623,972	42,679	666,651
Sheephead, California	9,651	----	2,951	12,602	----	12,602
Sierra	----	----	782	782	----	782
Skate	299,317	----	----	299,317	----	299,317
Smelt	491,265	----	----	491,265	4,080	495,345
Smelt, whitebait	335,852	----	----	335,852	----	335,852
Sole, Dover	6,716,070	1,110,547	----	7,826,617	----	7,826,617
Sole, English	3,415,573	230,345	----	3,645,918	----	3,645,918
Sole, petrale	3,158,923	231,816	----	3,390,739	----	3,390,739
Sole, rex	1,161,485	47,344	----	1,208,829	----	1,208,829
Sole, sand	76,028	1,102	----	77,130	----	77,130
Sole, miscellaneous	34,484	----	----	34,484	----	34,484
Splittail	738	----	----	738	----	738
Steelhead	----	----	----	----	1,563	1,563
Sturgeon	----	----	----	----	34,489	34,489
Swordfish	360,643	----	8,212	368,855	----	368,855
Tuna, albacore	20,594,360	143,709	8,385,175	29,123,244	30,291,007	59,414,251
Tuna, bigeye	----	----	----	----	461,396	461,396
Tuna, bluefin	13,762,432	----	7,120,218	20,882,650	1,121,625	22,004,275
Tuna, oriental	----	----	----	----	150,915	150,915
Tuna, skipjack	578	----	65,402,282	65,402,860	21,344,772	86,747,632
Tuna, yellowfin	----	----	191,854,056	191,854,056	70,456,206	262,310,262
Turbot	71,367	----	----	71,367	----	71,367
Wahoo	----	----	9,294	9,294	----	9,294
Whitefish, ocean	8,447	----	16,744	25,191	----	25,191
Yellowtail, California	80,689	----	300,080	380,769	----	380,769
Miscellaneous	1,496	----	418	1,914	215,030	216,944
Miscellaneous (animal food)	3,455,392	321,741	----	3,777,133	----	3,777,133

TABLE 7—Continued

Origin of Commercial Fish Landings and Shipments Into California During 1961

Species	Landings from				Shipments[1]	Grand total
	California waters	Waters north of State	Waters south of State	Total pounds		
Crustacean:						
Crab, market	11,711,225	102	----	11,711,327	----	11,711,327
Crab, rock	151,782	----	----	151,782	----	151,782
Lobster, spiny	412,453	----	6,269	418,722	----	418,722
Shrimp, bay	2,050	----	----	2,050	----	2,050
Shrimp, ocean	2,002,709	----	----	2,002,709	----	2,002,709
Mollusk:						
Abalone	4,553,766	----	----	4,553,766	----	4,553,766
Clam, gaper	220	----	----	220	----	220
Clam, jackknife	5,823	----	----	5,823	242	6,065
Clam, Pismo	----	----	----	----	940,400	940,400
Clam, Washington	1,976	----	----	1,976	----	1,976
Mussel	----	----	----	----	2,442	2,442
Octopus	3,065	40	----	3,105	----	3,105
Oyster, eastern	105,726	----	----	105,726	----	105,726
Oyster, giant Pacific	10,047,550	----	----	10,047,550	----	10,047,550
Squid	10,285,791	----	----	10,285,791	----	10,285,791
Total pounds	**322,200,110**	**2,409,882**	**274,653,517**	**599,263,509**	**125,989,962**	**725,253,471**

[1] For origin of shipments refer to Table 6.

TABLE 8

Monthly Landings and Shipments Into California During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS:													
Fish:													
Anchovy	436,420	804,980	690,135	56,350	497,890	300,769	560,030	1,561,102	1,163,911	624,726	720,000	295,260	7,711,573
Barracuda, California	64,094	88,372	36,202	83,269	99,801	33,119	63,777	54,710	15,459	91,134	33,598	45,844	709,379
Bonito, Pacific	689,699	1,305,874	160,794	305,038	18,668	97,158	278,462	824,974	646,637	711,892	849,349	2,624,427	8,512,972
Cabezon	797	499	561	115	897	547	17	155	104	250	249	761	4,952
Cabrilla, spotted	5,398	1,730	2,595	48	----	1,300	----	----	----	----	----	----	11,071
Carp	69,880	32,945	39,035	26,898	24,093	21,182	23,246	16,050	18,139	27,695	27,360	12,027	338,550
Croaker, white	38,336	124,789	111,844	60,520	131,830	140,584	95,956	56,935	42,652	57,289	19,128	9,301	889,164
Flounder	22,617	26,302	12,523	10,629	2,368	15,805	7,331	47,490	61,025	62,539	19,186	27,522	315,337
Flounder, arrowtooth	2,130	2,574	1,860	10,403	5,317	3,032	10,830	6,806	13,577	3,525	404	201	60,659
Flyingfish	----	----	----	----	55	13,131	12,331	7,115	170	----	----	----	32,802
Greenling, kelp	----	----	----	----	----	----	200	----	497	110	74	----	881
Grouper	32,926	33,237	36,783	86	17,736	9,635	645	----	----	----	11,219	60,004	202,271
Hake, Pacific	2,405	----	170	----	----	----	----	----	----	----	----	700	3,275
Halfmoon	1,454	20	----	----	----	----	35	16	20	171	----	4,191	5,907
Halibut, California	58,014	53,872	53,956	58,539	27,555	39,452	66,694	74,530	60,030	44,326	40,535	77,051	654,554
Halibut, Pacific	----	----	----	----	637	445	1,218	1,549	98	----	14	----	3,961
Hardhead	20,400	2,870	19,785	9,500	9,750	2,475	175	----	1,781	7,417	16,103	9,010	99,266
Herring, Pacific	741,229	74,090	965	139,735	111,314	73,162	24,559	300	2,479	100	1,685	231,630	1,401,248
Lingcod	34,069	36,217	58,608	71,958	189,827	172,122	219,998	317,757	133,174	89,799	59,257	57,157	1,439,943
Mackerel, jack	2,189,366	3,732,948	1,920,623	3,154,612	5,810,469	8,996,824	3,962,327	3,705,384	9,682,147	20,837,609	20,234,025	13,379,970	97,606,304
Mackerel, Pacific	777,289	937,708	807,017	8,833,387	5,569,506	1,042,098	3,414,198	2,581,163	2,868,607	6,380,870	7,134,672	3,763,679	44,110,194
Opaleye	814	----	----	----	----	----	----	65	----	----	12	1,446	2,337
Perch	6,342	8,692	17,785	36,756	72	----	9,243	15,072	4,879	6,363	6,147	6,894	118,245
Pompano, Pacific	3,914	1,089	274	975	203	1,389	765	431	378	1,295	483	229	11,425
Rock bass	----	435	853	1,026	----	----	185	----	----	85	----	----	2,584
Rockfish	1,112,573	839,790	971,102	1,009,121	1,075,812	1,079,967	954,984	881,332	683,680	806,583	735,719	680,099	10,830,762
Sablefish	174,283	129,972	196,913	96,516	77,412	72,515	93,930	156,080	136,108	186,359	189,848	106,592	1,616,528
Salmon	----	----	----	534,863	1,792,163	1,887,440	2,108,346	1,920,831	394,264	----	----	----	8,637,907
Sanddab	36,015	22,260	39,799	22,671	53,670	47,320	69,974	57,043	61,281	54,804	54,322	43,805	562,964
Sardine	184,965	358,612	478,670	569,070	503,920	521,323	492,472	1,356,480	16,658,742	8,399,059	8,084,851	5,560,900	43,169,064
Sculpin	1,438	1,584	1,495	2,578	631	1,738	1,446	4,289	3,504	2,046	2,682	3,287	26,718
Sea bass, giant	15,854	26,236	26,067	19,901	16,945	11,319	18,066	22,826	24,483	46,600	36,148	75,918	340,363
Seabass, white	52,392	38,922	50,823	22,260	30,781	96,446	51,383	98,569	54,670	86,239	63,893	47,846	694,224
Shark	42,223	29,303	30,992	35,853	52,726	78,024	64,346	45,094	51,933	55,030	58,559	79,889	623,972
Sheephead, California	1,003	993	529	100	523	618	987	1,617	1,288	2,215	1,255	1,474	12,602

TABLE 8—Continued

Monthly Landings and Shipments Into California During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS—Continued:													
Fish—Continued:													
Sierra	----	782	----	----	----	----	----	----	----	----	----	----	782
Skate	14,090	13,087	22,819	35,986	52,230	38,061	38,917	11,896	13,757	25,150	14,900	18,424	299,317
Smelt	7,243	79,978	28,070	29,470	27,000	52,938	85,113	69,936	60,927	41,321	6,371	2,898	491,265
Smelt, whitebait	17,624	47,241	62,203	98,082	26,574	34,779	36,368	5,631	1,033	----	435	5,882	335,852
Sole, Dover	189,145	242,333	481,920	792,137	1,126,050	871,022	878,562	1,064,258	693,175	679,838	668,613	139,564	7,826,617
Sole, English	210,716	188,966	350,340	302,102	283,023	306,006	207,531	300,006	421,782	435,148	249,455	390,843	3,645,918
Sole, petrale	405,600	102,784	188,791	244,062	288,293	266,265	344,856	464,457	225,643	245,587	299,137	315,264	3,390,739
Sole, rex	140,111	87,427	87,450	119,417	102,569	82,331	77,803	122,870	116,306	115,830	101,660	55,055	1,208,829
Sole, sand	6,421	7,098	832	1,024	635	5,531	2,378	2,870	3,195	9,489	9,971	27,686	77,130
Sole, miscellaneous	4,736	3,552	4,684	3,277	3,183	2,741	3,529	2,976	1,462	1,524	1,015	1,805	34,484
Splittail	329	134	166	----	----	----	----	----	----	----	----	109	738
Swordfish	----	----	----	----	----	42,562	101,083	168,468	53,343	3,399	----	----	368,855
Tuna, albacore	----	----	----	----	----	35,603	8,298,969	10,033,657	7,269,237	3,302,651	183,127	----	29,123,244
Tuna, bluefin	2,061	216	----	----	74,173	589,596	3,768,708	7,128,403	8,448,753	715,667	26,430	128,643	20,882,650
Tuna, skipjack	718,606	667,136	332,042	998,190	7,665,104	3,473,265	11,039,793	6,691,798	7,679,890	9,961,557	10,674,914	5,500,565	65,402,860
Tuna, yellowfin	20,429,491	20,178,537	36,229,025	18,691,293	26,909,006	14,898,900	7,675,274	8,865,342	7,819,950	8,376,975	9,802,412	11,977,851	191,854,056
Turbot	8,650	4,037	1,835	3,688	2,019	4,650	5,646	6,001	5,332	9,180	7,195	13,134	71,367
Wahoo	----	----	----	2,102	----	6,892	----	----	----	----	----	----	9,294
Whitefish, ocean	3,004	1,822	6,688	1,465	1,233	1,408	----	400	----	2,035	3,385	3,751	25,191
Yellowtail, California	4,936	11,522	9,602	23,067	3,600	50,311	168,299	10,927	29,877	32,293	26,105	10,230	380,769
Miscellaneous	7	30	163	208	473	435	51	18	----	105	123	301	1,914
Miscellaneous (animal food)	113,457	54,077	86,790	337,073	532,907	491,749	460,851	579,544	297,376	358,669	344,348	120,292	3,777,133
Crustacean:													
Crab, market	3,915,307	2,801,668	758,337	1,026,290	714,273	160,907	9,320	----	----	----	254,994	2,070,231	11,711,327
Crab, rock	7,488	4,435	4,821	11,042	11,892	14,965	20,912	19,127	17,136	11,931	14,697	13,336	151,782
Lobster, spiny	52,244	39,991	21,295	----	----	----	----	----	----	162,607	85,333	57,252	418,722
Shrimp, bay	----	105	----	----	----	----	----	----	830	470	275	370	2,050
Shrimp, ocean	----	----	----	----	----	295,162	389,225	762,657	315,985	239,680	----	----	2,002,709
Mollusk:													
Abalone	263,343	----	99,997	547,128	381,449	530,200	540,551	458,362	478,110	449,048	332,428	473,150	4,553,766
Clam, gaper	40	20	----	----	----	40	80	20	----	----	20	----	220
Clam, jackknife	77	269	343	536	641	772	930	969	669	386	107	124	5,823
Clam, Washington	344	501	541	402	----	----	----	----	140	48	----	----	1,976
Octopus	154	119	167	----	110	232	866	154	145	271	415	472	3,105

Oyster, eastern	9,100	8,775	5,850	7,475	8,060	7,150	6,500	6,630	7,973	19,913	7,500	10,800	105,726
Oyster, giant Pacific	1,239,656	1,068,470	1,055,141	498,755	429,808	283,969	304,708	411,267	633,389	1,384,881	1,484,320	1,253,186	10,047,550
Squid	491,760	1,114,030	195,115	309,375	43,187	365,980	1,122,584	313,440	1,016,865	525,950	1,360,365	3,427,140	10,285,791
Total pounds	35,074,079	35,446,057	45,803,785	39,256,723	54,810,063	37,675,361	48,197,563	51,317,849	68,397,997	65,697,733	64,360,827	53,225,472	599,263,509
SHIPMENTS:[1]													
Fish:													
Halibut, Pacific	----	----	----	----	----	1,440	----	----	5,400	----	----	----	6,840
Sablefish	----	----	41,000	19,000	----	52,468	36,919	----	76,625	20,042	----	168,000	414,054
Salmon	40,000	24,160	35,174	17,137	----	1,169	5,097	611	20,692	148,196	61,442	----	353,678
Seabass, white	----	----	----	----	----	----	----	2,776	----	----	----	----	2,776
Shad	----	2,700	----	----	1,601	53,433	20,254	----	----	40,000	20,000	7,780	145,768
Shark	----	12,208	5,588	----	10,569	----	834	2,880	10,600	----	----	----	42,679
Smelt	----	----	----	----	----	4,080	----	----	----	----	----	----	4,080
Steelhead	----	----	----	----	----	1,563	----	----	----	----	----	----	1,563
Sturgeon	----	10,313	1,223	----	10,727	5,058	3,668	----	----	3,500	----	----	34,489
Tuna, albacore	5,964,581	3,378,867	3,563,915	2,837,502	1,493,401	604,647	483,522	535,203	2,327,708	3,346,657	2,861,595	2,893,409	30,291,007
Tuna, bigeye	----	----	----	61,850	----	----	100,383	160,147	20,630	----	9,584	108,802	461,396
Tuna, bluefin	----	----	----	----	----	----	304,443	557,970	237,771	21,441	----	----	1,121,625
Tuna, oriental	80,190	----	----	----	----	----	----	----	----	----	19,890	50,835	150,915
Tuna, skipjack	313,884	103,870	1,370,149	4,776	643,431	3,884,238	2,764,600	5,524,435	561,197	1,421,188	1,230,552	3,522,452	21,344,772
Tuna, yellowfin	7,235,923	3,630,521	6,208,227	5,666,744	5,719,913	5,475,421	5,376,413	8,042,851	4,600,904	5,813,546	6,195,728	6,490,015	70,456,206
Miscellaneous	10,335	630	26,300	32,455	11,000	60,810	34,800	----	----	----	----	38,700	215,030
Mollusk:													
Clam, jackknife	----	----	----	----	56	----	186	----	----	----	----	----	242
Clam, Pismo	32,640	25,200	----	----	----	262,888	144,392	311,440	----	----	163,840	----	940,400
Mussel	----	----	----	----	315	----	400	765	650	100	212	----	2,442
Total pounds	13,677,553	7,188,469	11,251,576	8,639,464	7,891,013	10,407,215	9,275,911	15,139,078	7,862,177	10,814,670	10,562,843	13,279,993	125,989,962
Grand total	**48,751,632**	**42,634,526**	**57,055,361**	**47,896,187**	**62,701,076**	**48,082,576**	**57,473,474**	**66,456,927**	**76,260,174**	**76,512,403**	**74,923,670**	**66,505,465**	**725,253,471**

[1] For origin of shipments refer to Table 6.

TABLE 9

Monthly Landings and Shipments of Commercial Fish Into the Eureka Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Cabezon	----	----	----	----	15	----	----	----	----	----	----	----	15
Flounder	18,328	8,233	1,927	5,734	503	7,409	1,615	18,052	46,063	53,784	15,594	5,639	182,881
Flounder, arrowtooth	----	529	1,200	10,123	4,817	2,047	8,520	5,271	13,577	3,525	404	201	50,214
Halibut, California	----	----	----	----	----	----	----	216	----	----	----	----	216
Halibut, Pacific	----	----	----	----	607	445	1,218	1,549	98	----	----	----	3,917
Herring, Pacific	----	----	----	----	----	----	70	----	----	----	----	----	70
Lingcod	9,315	5,549	18,767	35,202	84,979	73,790	97,929	225,945	59,519	39,281	24,816	9,251	684,343
Perch	3,911	2,610	5,496	20,496	----	----	7,146	10,792	2,329	3,025	2,306	2,840	60,951
Rockfish	132,645	100,346	124,278	228,273	204,814	177,018	190,227	322,811	131,388	109,315	161,979	67,558	1,950,682
Sablefish	34,137	11,185	21,777	23,346	43,581	33,817	34,470	60,312	53,877	88,717	84,003	37,146	526,368
Salmon	----	----	----	292,797	526,546	655,546	1,308,622	1,216,489	134,901	----	----	----	4,134,901
Sanddab	6,350	9,455	6,522	7,041	4,574	15,958	10,359	17,777	5,289	5,824	7,558	1,900	98,607
Shark	----	----	----	----	----	----	185	40	----	146	765	----	1,136
Skate	----	----	----	18,400	35,930	23,920	21,110	1,612	----	220	78	----	101,270
Smelt	1,100	614	1,085	4,184	22,630	47,991	78,211	57,106	54,819	25,630	3,477	35	296,882
Smelt, whitebait	9,106	46,053	61,806	95,804	22,824	32,075	33,244	5,595	740	----	----	----	307,247
Sole, Dover	47,254	28,238	79,982	341,242	817,984	648,580	693,301	830,408	521,401	557,264	500,670	102,382	5,168,706
Sole, English	106,212	88,932	56,275	143,262	97,433	132,065	72,765	99,532	137,613	202,794	99,295	32,125	1,268,303
Sole, petrale	260,362	37,988	38,546	77,326	93,093	96,906	121,856	230,148	81,456	101,530	63,605	171,785	1,374,601
Sole, rex	32,551	19,629	16,565	67,115	58,625	53,014	53,848	72,832	54,408	56,173	45,913	26,247	556,920
Sole, sand	1,716	1,643	128	665	----	2,271	----	----	----	493	535	191	7,642
Sole, miscellaneous	335	100	----	----	----	----	----	----	----	----	----	----	435
Tuna, albacore	----	----	----	----	----	----	11,311	592,045	567,670	268,976	----	----	1,440,002
Turbot	1,255	65	----	345	----	----	56	606	2,452	2,074	622	119	7,594
Miscellaneous (animal food)	39,575	20,252	52,412	173,601	423,155	340,967	334,251	418,871	162,505	201,050	224,620	47,891	2,439,150
Crustacean:													
Crab, market	3,649,197	2,614,009	701,493	984,997	673,285	159,909	9,320	----	----	----	----	1,781,429	10,573,639
Crab, rock	----	----	----	----	20	75	----	15	----	----	----	----	110
Shrimp, ocean	----	----	----	----	----	295,162	389,225	762,657	315,985	239,680	----	----	2,002,709

Mollusk:													
Clam, Washington	344	501	541	402	----	----	----	----	140	48	----	----	1,976
Octopus	37	----	----	----	----	126	----	89	----	100	26	----	378
Oyster, giant Pacific	1,115,100	931,700	878,850	432,600	346,500	191,100	228,900	327,600	535,500	1,203,300	1,213,800	1,001,700	8,406,650
Total pounds	5,468,830	3,927,631	2,067,650	2,962,955	3,461,945	2,990,191	3,707,759	5,278,370	2,881,730	3,162,949	2,450,066	3,288,439	41,648,515
Waters north of State:													
Fish:													
Flounder	----	----	----	42	10	1,762	----	11,342	4,558	1,915	110	----	19,739
Halibut, Pacific	----	----	----	----	----	----	----	----	----	----	14	----	14
Lingcod	----	----	774	3,684	7,048	10,776	15,783	18,776	16,872	4,226	278	----	78,217
Rockfish	----	----	21,103	13,132	20,466	19,995	18,547	35,886	14,443	8,618	14,538	----	166,728
Sablefish	----	----	2,754	13,132	5,173	5,504	3,766	3,763	3,135	5,201	11,103	----	53,531
Sanddab	----	----	170	172	560	1,566	839	466	477	560	97	----	4,907
Sole, Dover	----	----	17,179	270,361	160,111	166,877	111,517	115,124	59,099	81,912	128,367	----	1,110,547
Sole, English	----	----	2,583	10,468	8,333	38,264	6,228	67,496	73,576	19,774	3,623	----	230,345
Sole, petrale	----	----	4,239	10,851	18,558	31,340	25,510	92,341	29,442	11,038	8,497	----	231,816
Sole, rex	----	----	2,982	7,784	3,307	7,347	3,020	9,688	5,908	3,624	3,684	----	47,344
Sole, sand	----	----	----	----	----	513	18	230	----	341	----	----	1,102
Tuna, albacore	----	----	----	----	----	----	----	246	----	----	----	----	246
Miscellaneous (animal food)	----	----	3,656	61,110	37,702	44,847	54,550	34,098	22,641	25,119	38,018	----	321,741
Crustacean:													
Crab, market	----	----	----	74	----	28	----	----	----	----	----	----	102
Mollusk:													
Octopus	----	----	----	----	----	----	----	----	----	40	----	----	40
Total pounds	----	----	55,440	390,810	261,268	328,819	239,778	389,456	230,151	162,368	208,329	----	2,266,419
SHIPMENTS:[1]													
Fish:													
Salmon	----	----	----	----	----	500	----	611	----	----	----	----	1,111
Total pounds	----	----	----	----	----	500	----	611	----	----	----	----	1,111
Grand total	**5,468,830**	**3,927,631**	**2,123,090**	**3,353,765**	**3,723,213**	**3,319,510**	**3,947,537**	**5,668,437**	**3,111,881**	**3,325,317**	**2,658,395**	**3,288,439**	**43,916,045**

[1] For origin of shipments refer to Table 6.

TABLE 10

Monthly Landings and Shipments of Commercial Fish Into the San Francisco Area Duirng 1961 [1]

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy	----	----	----	----	----	----	3,450	4,000	173,620	48,500	----	----	229,570
Cabezon	----	----	----	----	60	----	----	----	----	----	----	100	160
Carp	69,880	32,945	39,035	26,898	24,093	21,182	23,246	16,050	18,139	27,695	27,085	11,152	337,400
Croaker, white	84	15	29	10	315	110	395	140	760	325	380	1,495	4,058
Flounder	1,510	6,265	6,935	4,500	1,775	6,623	3,770	18,018	10,305	5,880	2,722	20,235	88,538
Flounder, arrowtooth	2,130	2,045	565	280	500	985	2,310	1,535	----	----	----	----	10,350
Hake, Pacific	2,405	----	140	----	----	----	----	----	----	----	----	700	3,245
Halibut, California	9,911	3,194	363	295	259	1,293	2,683	3,111	984	784	4,590	22,583	50,050
Halibut, Pacific	----	----	----	----	30	----	----	----	----	----	----	----	30
Hardhead	20,400	2,870	19,785	9,500	9,750	2,475	175	----	1,781	7,417	16,103	9,010	99,266
Herring, Pacific	741,229	73,735	115	----	----	----	----	----	----	----	1,685	223,130	1,039,894
Lingcod	13,455	14,548	16,540	22,184	76,459	63,630	84,107	58,800	45,916	25,346	7,272	16,955	445,212
Mackerel, jack	----	----	----	----	----	----	555	19,038	816	----	----	400	20,809
Perch	1,792	4,422	10,192	4,961	25	----	32	160	100	460	624	654	23,422
Rockfish	282,493	126,053	226,724	240,686	264,004	216,543	152,598	129,202	165,014	178,475	141,856	98,104	2,221,752
Sablefish	75,316	60,938	147,806	55,255	10,615	23,445	12,451	70,015	67,820	75,725	36,618	36,636	672,640
Salmon	----	----	----	167,335	907,098	1,029,816	722,802	650,707	223,975	----	----	----	3,701,733
Sanddab	21,715	10,895	30,790	12,715	41,215	21,370	45,755	27,374	33,845	29,260	31,522	40,110	346,566
Seabass, white	2,003	96	----	31	----	19	----	50	6,461	12,368	679	9,159	30,866
Shark	8,745	3,452	1,250	----	170	1,462	2,210	7,350	20,202	27,980	13,862	43,563	130,246
Skate	12,100	8,255	10,675	10,600	12,540	10,130	8,250	6,550	10,850	14,630	9,775	15,840	130,195
Smelt	1,190	2,935	18,550	17,821	2,581	2,734	2,708	2,443	3,969	2,464	773	----	58,168
Smelt, whitebait	183	1,014	183	2,278	3,750	2,704	3,124	36	----	----	435	2,287	15,994
Sole, Dover	138,548	208,960	374,434	161,436	135,594	42,847	53,164	82,889	102,730	32,072	36,265	36,042	1,404,981
Sole, English	81,669	58,623	42,205	46,069	102,085	82,783	90,625	74,368	158,260	145,010	114,550	307,726	1,303,973

Sole, petrale	93,472	32,411	38,490	37,761	91,705	48,942	127,665	64,278	69,137	74,579	101,007	36,722	816,169
Sole, rex	80,810	43,313	41,560	24,664	34,100	19,345	18,260	25,472	48,835	35,135	32,547	10,512	414,553
Sole, sand	4,565	3,320	680	345	535	2,747	2,360	2,400	3,195	8,655	9,436	27,495	65,733
Sole, miscellaneous	----	----	225	----	1,135	70	36	525	182	643	----	179	2,995
Splittail	329	134	166	----	----	----	----	----	----	----	----	109	738
Tuna, albacore	----	----	----	----	----	----	361	1,101,501	1,737,208	538,657	54,562	----	3,432,289
Turbot	7,295	2,855	1,835	1,780	1,930	4,650	5,590	5,395	2,880	7,106	6,573	13,015	60,904
Miscellaneous	----	30	----	----	----	----	----	----	----	30	30	----	90
Miscellaneous (animal food)	24,375	5,300	900	33,515	21,420	11,905	19,150	15,520	33,645	14,895	4,440	2,120	187,185
Crustacean:													
Crab, market	253,636	172,510	51,011	29,702	21,907	350	----	----	----	----	250,912	285,491	1,065,519
Shrimp, bay	---	105	----	----	----	----	----	----	830	470	275	370	2,050
Mollusk:													
Abalone	1,575	----	1,200	2,100	1,075	3,125	950	975	1,833	4,650	4,350	2,275	24,108
Octopus	25	112	150	----	110	62	866	65	145	100	340	472	2,447
Oyster, eastern	9,100	8,775	5,850	7,475	8,060	7,150	6,500	6,630	7,973	19,913	7,500	10,800	105,726
Oyster, giant Pacific	28,456	27,220	28,191	28,080	33,958	48,969	40,233	48,142	53,489	60,731	57,570	76,536	531,575
Total pounds	1,990,396	917,345	1,116,574	948,276	1,808,853	1,677,466	1,436,381	2,442,739	3,004,899	1,399,955	976,338	1,361,977	19,081,199
SHIPMENTS:[2]													
Fish:													
Shad	----	----	----	----	1,601	4,388	----	----	----	----	----	7,780	13,769
Tuna, albacore	637,610	899,610	348,940	149,430	456,870	118,665	----	57,380	6,030	311,580	34,340	----	3,020,455
Tuna, bigeye	----	----	----	61,850	----	----	----	----	20,630	----	----	100,000	182,480
Tuna, bluefin	----	----	----	----	----	----	202,030	312,940	----	----	----	----	514,970
Tuna, oriental	80,190	----	----	----	----	----	----	----	----	----	10,000	----	90,190
Tuna, skipjack	----	----	----	----	----	----	----	----	63,950	60,270	50,150	----	174,370
Tuna, yellowfin	1,758,879	724,820	1,743,700	1,608,070	1,493,348	996,809	917,980	1,405,550	916,570	2,053,211	2,528,235	2,215,620	18,362,792
Total pounds	2,476,679	1,624,430	2,092,640	1,819,350	1,951,819	1,119,862	1,120,010	1,775,870	1,007,180	2,425,061	2,622,725	2,323,400	22,359,026
Grand total	**4,467,075**	**2,541,775**	**3,209,214**	**2,767,626**	**3,760,672**	**2,797,328**	**2,556,391**	**4,218,609**	**4,012,079**	**3,825,016**	**3,599,063**	**3,685,377**	**41,440,225**

[1] Includes Sacramento area landings.
[2] For origin of shipments refer to Table 6.

TABLE 11

Monthly Landings of Commercial Fishing Boats in the Monterey Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy	187,170	442,725	39,600	6,550	16,050	10,870	315,520	1,362,320	770,841	246,676	352,890	36,300	3,787,512
Bonito, Pacific	----	----	----	----	----	----	6	----	----	----	----	----	6
Cabezon	669	358	300	9	752	547	17	----	104	236	212	564	3,768
Croaker, white	189	48,697	59,120	20,111	20,295	48,470	10,653	5,266	8,475	11,235	5,483	144	238,138
Flounder	2,681	8,702	1,922	----	----	----	1,946	78	99	960	753	1,619	18,760
Flounder, arrowtooth	----	----	95	----	----	----	----	----	----	----	----	----	95
Greenling, kelp	----	----	----	----	----	----	----	----	----	110	43	----	153
Halibut, California	1,020	580	47	----	----	116	4,690	352	711	670	387	1,384	9,957
Herring, Pacific	----	355	850	139,735	111,314	73,162	24,489	300	2,479	100	----	----	352,784
Lingcod	5,832	7,044	10,868	5,815	18,085	18,350	13,912	7,936	8,811	13,796	14,351	23,697	148,497
Mackerel, jack	1,535	2,380	263,983	2,150	15,875	10,518	10,597	7,410	105,685	3,210,447	20,360	----	3,650,940
Mackerel, Pacific	----	380	----	100	----	130	----	6,500	3,285	----	----	----	10,395
Perch	81	99	639	10,257	----	----	39	58	----	1,310	431	53	12,967
Pompano, Pacific	----	759	49	142	40	29	----	155	12	----	1	69	1,256
Rockfish	235,093	221,554	387,193	315,849	350,076	283,808	264,842	217,581	235,827	228,218	226,609	261,369	3,228,024
Sablefish	62,217	55,489	22,761	3,428	16,188	9,436	43,148	21,025	11,035	16,371	57,744	31,567	350,409
Salmon	----	----	----	73,548	357,442	128,520	54,773	33,773	6,521	----	----	----	654,577
Sanddab	7,950	1,870	2,317	2,565	7,128	8,266	12,863	11,406	21,635	19,100	15,107	1,777	111,984
Sardine	28,900	----	----	----	----	190	22,592	264,765	508,375	254,460	30,360	----	1,109,642
Seabass, white	505	327	40	107	----	----	70	62	4,463	6,388	1,162	282	13,406

Shark	5,179	2,869	670	----	100	2,229	7,568	1,148	5,431	4,824	4,376	4,583	38,977
Skate	1,865	4,469	10,492	6,595	3,750	3,915	9,557	3,712	2,812	10,178	5,047	2,513	64,905
Smelt	1,535	602	1,570	3,550	211	1,803	3,844	10,078	1,986	6,854	542	890	33,465
Smelt, whitebait	8,335	174	214	----	----	----	----	----	293	----	----	3,595	12,611
Sole, Dover	----	110	4,070	4,792	7,630	11,185	13,085	9,535	7,480	1,175	520	60	59,642
Sole, English	4,250	9,636	22,119	14,900	18,685	16,200	12,630	20,673	26,700	33,002	15,658	12,262	206,715
Sole, petrale	1,265	2,587	7,482	12,783	11,157	8,105	7,780	9,262	18,865	18,625	10,238	3,290	111,439
Sole, rex	11,223	8,455	9,042	5,238	2,015	1,978	2,325	4,098	5,210	5,133	8,552	7,186	70,455
Sole, sand	----	----	----	----	----	----	----	240	----	----	----	----	240
Sole, miscellaneous	1,349	3,406	2,311	634	----	266	190	177	189	412	603	1,475	11,012
Swordfish	----	----	----	----	----	----	----	----	451	----	----	----	451
Tuna, albacore	----	----	----	----	----	----	50,574	522,270	1,099,070	198,120	1,716	----	1,871,750
Miscellaneous (animal food)	----	----	747	----	----	----	----	525	8,155	----	----	290	9,717
Crustacean:													
Crab, market	4,079	3,542	1,400	185	----	----	----	----	----	----	3,835	2,998	16,039
Mollusk:													
Abalone	----	----	----	----	----	----	250	----	----	----	----	433	683
Clam, gaper	40	20	----	----	----	40	80	20	----	----	20	----	220
Octopus	----	----	----	----	----	44	----	----	----	31	----	----	75
Squid	----	----	40	246,700	41,335	338,330	1,117,264	313,440	1,002,250	247,560	292,635	86,730	3,686,284
Grand total	**572,967**	**827,189**	**849,941**	**875,743**	**998,128**	**976,507**	**2,005,304**	**2,834,165**	**3,867,250**	**4,535,991**	**1,069,635**	**485,130**	**19,897,950**

TABLE 12

Monthly Landings of Commercial Fishing Boats In the Santa Barbara Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy	----	3,395	----	----	1,800	3,000	4,100	10,650	1,950	----	----	29,235	54,130
Barracuda, California	23,126	41,320	3,630	48,615	----	512	----	----	12,683	21,879	1,475	1,131	154,371
Bonito, Pacific	1,265	1,639	47	177	300	----	----	271	391	2,575	2,639	12,285	21,589
Cabezon	118	141	261	106	70	----	----	155	----	14	37	97	999
Croaker, white	----	----	----	----	5	85	100	156	10	----	36	647	1,039
Flounder	98	3,102	1,739	353	80	11	----	----	----	----	7	29	5,419
Greenling, kelp	----	----	----	----	----	----	200	----	497	----	31	----	728
Hake, Pacific	----	----	30	----	----	----	----	----	----	----	----	----	30
Halibut, California	17,077	23,265	19,954	21,059	15,401	19,226	15,296	17,485	5,628	3,845	8,154	25,284	191,674
Lingcod	5,394	9,024	11,659	5,073	3,256	5,538	8,267	6,300	2,056	7,108	12,540	7,254	83,469
Mackerel, jack	745,220	141,900	362,900	306,402	457,000	126,100	862,814	11	1,130,549	2,821,590	4,090,370	3,749,985	14,794,841
Mackerel, Pacific	9,000	----	----	38,100	12,000	----	29,500	41,300	60,600	31,600	1,668,740	586,840	2,477,680
Perch	300	908	1,404	944	----	----	2,026	3,932	2,175	1,094	2,255	2,122	17,160
Pompano, Pacific	----	----	----	----	----	25	----	----	----	----	----	----	25
Rockfish	342,468	278,802	102,677	107,960	165,728	277,225	303,784	151,065	92,641	213,082	122,547	162,969	2,320,948
Sablefish	2,613	2,360	1,665	1,355	1,855	100	95	965	225	325	180	905	12,643
Salmon	----	----	----	1,183	1,077	60,477	22,140	19,822	28,838	----	----	----	133,537
Sanddab	----	40	----	178	115	100	135	----	----	----	----	----	568
Sardine	20,750	25,300	82,400	----	----	----	----	562,070	3,065,460	1,309,800	2,660,355	856,155	8,582,290
Sculpin	----	----	----	143	----	----	----	----	----	----	----	----	143
Sea bass, giant	145	137	----	506	380	330	415	79	16	27	138	----	2,173
Seabass, white	18,682	10,424	14,254	5,311	4,859	11,380	8,771	9,905	9,389	1,573	3,724	3,207	101,479
Shark	4,173	1,851	2,431	13,269	11,953	16,584	15,261	9,688	7,094	3,385	5,418	7,508	98,615
Sheephead, California	537	168	73	----	----	38	206	----	----	----	----	54	1,076
Skate	125	338	1,548	391	10	96	----	----	75	----	----	41	2,624
Smelt	----	----	----	----	18	170	----	299	153	26	203	93	962
Sole, Dover	3,343	5,025	6,255	14,306	4,731	1,533	7,495	26,302	2,465	7,415	2,791	1,080	82,741
Sole, English	18,585	31,775	227,158	87,403	56,487	36,694	25,283	37,937	25,633	34,568	16,329	38,730	636,582
Sole, petrale	50,501	29,798	100,034	105,341	73,780	80,972	62,045	68,428	26,743	39,815	115,790	103,467	856,714
Sole, rex	15,527	16,030	17,301	14,616	4,522	647	350	10,780	1,945	15,765	10,964	11,110	119,557

Sole, sand	140	2,135	24	14	100	----	----	----	----	----	----	----	2,413
Sole, miscellaneous	3,052	19	2,123	1,519	152	404	260	31	----	156	31	151	7,898
Swordfish	----	----	----	----	----	1,687	6,155	39,916	13,276	2,318	----	----	63,352
Tuna, albacore	----	----	----	----	----	----	106,047	166,860	279,976	122,655	204	----	675,742
Tuna, bluefin	----	----	----	----	15	----	----	----	----	----	----	----	15
Turbot	100	1,117	----	1,563	89	----	----	----	----	----	----	----	2,869
Whitefish, ocean	----	----	----	----	----	----	----	45	----	----	----	----	45
Yellowtail, California	35	1,374	----	----	64	21	133	----	3,104	2,439	619	----	7,789
Miscellaneous	7	----	----	----	55	234	----	----	----	----	----	----	296
Miscellaneous (animal food)	49,507	28,525	29,075	68,847	50,630	94,030	52,900	110,530	70,430	117,605	77,270	69,991	819,340
Crustacean:													
Crab, market	8,395	11,607	4,433	11,332	19,081	620	----	----	----	----	247	313	56,028
Crab, rock	48	222	276	5,120	6,484	6,511	8,161	10,109	9,852	8,035	10,987	11,633	77,438
Lobster, spiny	13,754	8,791	3,565	----	----	----	----	----	----	26,070	14,270	12,114	78,564
Mollusk:													
Abalone	169,988	----	57,568	423,341	287,234	381,904	371,298	290,883	338,026	291,075	197,962	336,215	3,145,494
Octopus	----	----	17	----	----	----	----	----	----	----	----	----	17
Oyster, giant Pacific	96,100	109,550	148,100	38,075	49,350	43,900	35,575	35,525	44,400	120,850	212,950	174,950	1,109,325
Squid	125,100	675,800	----	----	----	----	----	----	----	10,000	347,325	1,412,840	2,571,065
Total pounds	1,745,273	1,465,882	1,202,601	1,322,602	1,228,681	1,170,154	1,948,812	1,631,499	5,236,280	5,216,689	9,586,588	7,618,435	39,373,496
Waters north of state:													
Fish:													
Tuna, albacore	----	----	----	----	----	----	----	6,193	----	----	----	----	6,193
Total pounds	----	----	----	----	----	----	----	6,193	----	----	----	----	6,193
Waters south of state:													
Fish:													
Tuna, albacore	----	----	----	----	----	----	1,878	----	----	----	----	----	1,878
Total pounds	----	----	----	----	----	----	1,878	----	----	----	----	----	1,878
Grand total	**1,745,273**	**1,465,882**	**1,202,601**	**1,322,602**	**1,228,681**	**1,170,154**	**1,950,690**	**1,637,692**	**5,236,280**	**5,216,689**	**9,586,588**	**7,618,435**	**39,381,567**

TABLE 13

Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy	249,250	358,860	650,535	49,800	480,040	286,899	236,960	184,132	217,500	320,550	367,110	229,725	3,640,361
Barracuda, California	10,300	27,535	10,170	30,119	80,984	30,532	62,636	29,374	1,928	18,197	9,809	----	311,584
Bonito, Pacific	685,490	1,301,824	160,507	304,802	16,244	91,201	243,353	778,429	638,357	705,006	844,800	2,606,251	8,376,264
Carp	----	----	----	----	----	----	----	----	----	----	275	875	1,150
Croaker, white	38,043	75,958	52,592	40,360	111,215	91,919	84,762	50,442	32,974	45,185	12,996	7,015	643,461
Flyingfish	----	----	----	----	55	13,131	12,331	7,115	170	----	----	----	32,802
Halfmoon	1,454	20	----	----	----	----	35	16	20	171	----	4,191	5,907
Halibut, California	12,679	7,192	19,780	29,411	4,506	3,561	1,819	9,504	10,283	9,040	7,224	12,696	127,695
Herring, Pacific	----	----	----	----	----	----	----	----	----	----	----	8,500	8,500
Lingcod	28	52	----	----	----	38	----	----	----	----	25	----	143
Mackerel, jack	1,442,611	3,588,668	1,293,740	2,846,060	5,337,594	8,860,206	3,088,361	3,678,925	8,445,097	14,805,572	16,123,295	9,629,585	79,139,714
Mackerel, Pacific	768,289	933,549	801,598	8,781,641	5,554,616	1,037,367	3,384,035	2,532,704	2,802,223	6,309,544	5,462,614	3,176,444	41,544,624
Opaleye	814	----	----	----	----	----	----	65	----	----	12	1,446	2,337
Perch	258	653	40	25	47	----	----	130	275	474	531	1,225	3,658
Pompano, Pacific	3,914	330	225	833	163	1,335	765	276	366	1,295	482	----	9,984
Rockfish	54,007	40,525	29,128	52,446	24,496	32,439	18,044	17,700	39,441	24,115	23,689	29,651	385,681
Sablefish	----	----	50	----	----	213	----	----	16	20	200	338	837
Salmon	----	----	----	----	----	13,081	9	40	29	----	----	----	13,159
Sanddab	----	----	----	----	78	60	23	20	35	40	38	18	312
Sardine	91,695	333,312	396,270	569,070	503,920	517,133	469,880	529,645	13,084,907	6,834,799	5,394,136	4,704,745	33,429,512
Sculpin	1,011	221	632	820	631	575	1,121	2,388	283	72	55	28	7,837
Sea bass, giant	102	556	799	227	1,024	1,319	612	141	2,693	331	167	313	8,284
Seabass, white	18,312	10,367	15,939	8,566	24,757	62,298	37,368	60,073	15,486	8,059	4,410	1,067	266,702
Shark	12,289	13,934	24,447	14,092	27,007	47,619	29,248	23,555	14,656	13,433	26,397	15,119	261,796
Sheephead, California	93	167	184	71	186	65	29	906	799	829	233	290	3,852
Skate	----	25	104	----	----	----	----	22	20	122	----	30	323
Smelt	3,418	75,790	6,865	3,908	1,560	240	350	10	----	6,347	1,376	1,880	101,744
Sole, miscellaneous	----	27	21	31	----	214	----	619	392	78	331	----	1,713
Swordfish	----	----	----	----	----	38,541	88,231	106,798	25,362	408	----	----	259,340
Tuna, albacore	----	----	----	----	----	----	4,067,165	3,611,988	1,917,895	1,288,030	68,303	----	10,953,381
Tuna, bluefin	----	----	----	----	947	51,174	1,851,390	3,489,385	7,734,327	590,324	12,520	----	13,730,067
Tuna, skipjack	----	----	----	----	----	----	----	----	578	----	----	----	578
Whitefish, ocean	979	1,537	2,462	475	48	888	----	73	----	----	1,170	743	8,375
Yellowtail, California	1,671	2,565	5,333	3,237	2,433	7,037	2,649	2,792	8,965	5,068	2,472	3,791	48,013
Miscellaneous	----	----	163	208	----	201	51	18	----	----	88	301	1,030

Crustacean:													
Crab, rock	7,252	4,213	4,545	5,922	5,388	8,379	12,751	9,003	7,284	3,632	3,046	1,703	73,118
Lobster, spiny	25,628	19,064	9,688	----	----	----	----	----	----	78,895	42,250	21,718	197,243
Mollusk:													
Abalone	44,450	----	11,725	50,549	65,911	99,836	135,823	132,474	99,198	131,449	116,091	115,025	1,002,531
Octopus	92	7	----	----	----	----	----	----	----	----	49	----	148
Squid	366,660	438,230	195,075	62,675	----	27,650	5,320	----	14,615	268,390	720,405	1,927,570	4,026,590
Total pounds	3,840,789	7,235,181	3,692,617	12,855,348	12,243,850	11,325,151	13,835,121	15,258,762	35,116,174	31,478,500	29,246,574	22,502,283	198,630,350
Waters south of State:													
Fish:													
Barracuda, California	30,620	14,605	19,775	----	9,705	----	----	23,995	----	49,715	18,770	40,460	207,645
Bonito, Pacific	----	604	----	----	----	5,515	34,218	31,799	----	----	----	----	72,136
Cabrilla, spotted	5,398	1,730	2,595	----	----	1,300	----	----	----	----	----	----	11,023
Grouper	26,967	31,733	36,783	----	17,736	9,635	645	----	----	----	11,219	55,265	189,983
Halibut, California	----	----	----	----	----	----	----	----	----	----	80	45	125
Pompano, Pacific	----	----	----	----	----	----	----	----	----	----	----	160	160
Rock bass	----	435	853	----	----	----	----	----	----	85	----	----	1,373
Rockfish	20,769	24,862	24,403	12,920	10,647	45,884	60	----	230	17,573	15,882	25,369	198,599
Sablefish	----	----	100	----	----	----	----	----	----	----	----	----	100
Sea bass, giant	15,053	19,667	23,160	18,310	12,845	8,455	16,842	20,515	21,149	42,767	32,630	69,158	300,551
Seabass, white	----	15,347	----	----	----	----	----	9,005	14,261	30,030	6,897	4,991	80,531
Shark	----	2,355	----	----	----	835	----	----	1,855	2,852	----	733	8,630
Sierra	----	643	----	----	----	----	----	----	----	----	----	----	643
Tuna, albacore	----	----	----	----	----	9,493	509,860	456,509	30,944	33,376	----	----	1,040,182
Tuna, bluefin	2,061	216	----	----	73,211	538,303	1,905,568	3,452,017	472,998	116,288	----	128,643	6,689,305
Tuna, skipjack	466,631	186,408	249,026	485,590	4,301,899	2,632,874	9,117,465	5,184,911	6,448,374	7,263,943	8,423,337	4,403,382	49,163,840
Tuna, yellowfin	19,841,795	16,598,712	33,205,332	15,883,952	24,082,964	12,198,013	5,257,639	7,113,931	6,702,684	5,591,389	7,885,341	9,672,787	164,034,539
Wahoo	----	----	----	2,402	----	6,892	----	----	----	----	----	----	9,294
Whitefish, ocean	1,790	285	2,778	990	495	250	----	----	----	395	320	1,553	8,856
Yellowtail, California	2,395	6,474	1,150	19,748	----	25,800	163,439	3,910	3,575	8,250	12,402	5,530	252,673
Miscellaneous	----	----	----	----	418	----	----	----	----	----	----	----	418
Crustacean:													
Lobster, spiny	----	3,887	2,382	----	----	----	----	----	----	----	----	----	6,269
Total pounds	20,413,479	16,907,963	33,568,337	16,423,912	28,509,920	15,483,249	17,005,736	16,296,592	13,696,070	13,156,663	16,406,878	14,408,076	222,276,875

TABLE 13—Continued

Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
SHIPMENTS:[1]													
California waters:													
Fish:													
Halibut, Pacific	----	----	----	----	----	1,440	----	----	5,400	----	----	----	6,840
Sablefish	----	----	41,000	19,000	----	52,468	36,919	----	76,625	20,042	----	168,000	414,054
Salmon	40,000	24,160	35,174	17,137	----	669	5,097	----	20,692	148,196	61,442	----	352,567
Seabass, white	----	----	----	----	----	----	----	2,776	----	----	----	----	2,776
Shad	----	2,700	----	----	----	49,045	20,254	----	----	40,000	20,000	----	131,999
Shark	----	12,208	5,588	----	10,569	----	834	2,880	10,600	----	----	----	42,679
Smelt	----	----	----	----	----	4,080	----	----	----	----	----	----	4,080
Steelhead	----	----	----	----	----	1,563	----	----	----	----	----	----	1,563
Sturgeon	----	10,313	1,223	----	10,727	5,058	3,668	----	----	3,500	----	----	34,489
Tuna, albacore	5,326,971	2,255,233	2,170,889	2,433,529	1,036,531	485,982	483,522	477,823	2,321,678	3,035,077	2,722,963	2,893,409	25,643,607
Tuna, bigeye	----	----	----	----	----	----	100,383	160,147	----	----	9,584	8,802	278,916
Tuna, bluefin	----	----	----	----	----	----	102,413	169,380	237,771	21,441	----	----	531,005
Tuna, oriental	----	----	----	----	----	----	----	----	----	----	9,890	50,835	60,725
Tuna, skipjack	----	103,870	1,253,821	----	643,431	519,628	1,376,313	2,267,939	422,628	272,508	----	1,050,337	7,910,475
Tuna, yellowfin	3,628,451	2,905,701	2,396,982	3,332,575	3,602,793	3,211,659	3,710,342	3,272,391	3,426,936	2,830,128	3,166,313	3,376,043	38,860,314
Miscellaneous	10,335	630	26,300	32,455	11,000	60,810	34,800	----	----	----	----	38,700	215,030
Mollusk:													
Clam, Pismo	32,640	25,200	----	----	----	262,888	144,392	311,440	----	----	163,840	----	940,400
Total pounds	9,038,397	5,340,015	5,930,977	5,834,696	5,315,051	4,655,290	6,018,937	6,664,776	6,522,330	6,370,892	6,154,032	7,586,126	75,431,519
Grand total	**33,292,665**	**29,483,159**	**43,191,931**	**35,113,956**	**46,068,821**	**31,463,690**	**36,859,794**	**38,220,130**	**55,334,574**	**51,006,055**	**51,807,484**	**44,496,485**	**496,338,744**

[1] For origin of shipments refer to Table 6.

TABLE 14

Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Barracuda, California	48	3,249	1,056	1,268	2,916	2,075	1,141	516	----	3	----	135	12,407
Bonito, Pacific	2,944	1,807	240	59	2,124	442	885	14,475	7,093	4,226	1,730	5,516	41,541
Cabezon	10	----	----	----	----	----	----	----	----	----	----	----	10
Croaker, white	20	119	103	39	----	----	46	931	433	544	233	----	2,468
Halibut, California	17,287	19,641	11,599	7,774	7,363	15,256	3,539	19,600	23,731	16,233	9,600	14,257	165,880
Lingcod	45	----	----	----	----	----	----	----	----	17	----	----	62
Mackerel, Pacific	----	3,779	5,419	13,546	2,890	4,601	663	659	2,499	39,726	3,318	395	77,495
Perch	----	----	14	73	----	----	----	----	----	----	----	----	87
Rockfish	31,550	38,059	34,088	29,736	13,309	21,961	5,552	6,810	4,696	11,605	6,861	12,978	217,205
Sanddab	----	----	----	----	----	----	----	----	----	20	----	----	20
Sardine	43,620	----	----	----	----	4,000	----	----	----	----	----	----	47,620
Sculpin	427	1,363	863	1,615	----	1,163	325	1,901	3,221	1,974	2,627	3,259	18,738
Sea bass, giant	489	174	----	10	523	210	16	449	37	29	43	72	2,052
Seabass, white	7,777	2,361	1,564	1,117	945	22,749	3,113	3,475	1,234	1,005	509	189	46,038
Shark	11,837	4,842	1,229	8,492	13,496	9,295	9,087	3,313	2,526	1,978	6,514	6,743	79,352
Sheephead, California	373	658	122	29	177	515	602	----	47	699	371	1,130	4,723
Smelt	----	37	----	7	----	----	----	----	----	----	----	----	44
Sole, miscellaneous	----	----	4	1,093	1,896	1,787	3,043	1,624	699	235	50	----	10,431
Swordfish	----	----	----	----	----	2,334	3,895	16,344	14,254	673	----	----	37,500
Tuna, albacore	----	----	----	----	----	35	140,776	264,844	1,069,416	687,783	58,342	----	2,221,196
Tuna, bluefin	----	----	----	----	----	119	417	14,002	17,812	----	----	----	32,350
Whitefish, ocean	----	----	----	----	----	----	----	27	----	----	----	----	27
Yellowtail, California	16	599	32	82	397	17,453	2,078	692	1,334	975	1,229	----	24,887
Miscellaneous	----	----	----	----	----	----	----	----	----	75	5	----	80
Crustacean:													
Crab, rock	188	----	----	----	----	----	----	----	----	264	664	----	1,116
Lobster, spiny	12,862	8,249	5,660	----	----	----	----	----	----	57,642	28,813	23,420	136,646
Mollusk:													
Abalone	47,330	----	29,504	71,138	27,229	45,335	32,230	34,030	39,053	21,874	14,025	19,202	380,950
Clam, jackknife	77	269	343	536	641	772	930	969	669	386	107	124	5,823
Squid	----	----	----	----	1,852	----	----	----	----	----	----	----	1,852
Total pounds	176,900	85,206	91,840	136,614	75,758	150,102	208,338	384,661	1,188,754	847,966	135,041	87,420	3,568,600
Waters north of state:													
Fish:													
Tuna, albacore	----	----	----	----	----	----	----	----	----	137,270	----	----	137,270
Total pounds	----	----	----	----	----	----	----	----	----	137,270	----	----	137,270

TABLE 14—Continued

Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM—Continued:													
Waters south of state:													
Fish:													
Barracuda, California	----	1,663	1,571	3,267	6,196	----	----	825	848	1,340	3,544	4,118	23,372
Bonito, Pacific	----	----	----	----	----	----	----	----	796	85	180	375	1,436
Cabrilla, spotted	----	----	----	48	----	----	----	----	----	----	----	----	48
Grouper	5,959	1,504	----	86	----	----	----	----	----	----	----	----	12,288
Halibut, California	40	----	2,213	----	26	----	38,667	24,262	18,693	13,754	10,500	802	108,957
Rock Bass	----	----	----	1,026	----	----	185	----	----	----	----	----	1,211
Rockfish	13,543	9,589	21,508	8,119	22,242	5,094	1,330	277	----	15,582	21,758	22,101	141,143
Sea bass, giant	65	5,702	2,108	848	2,173	1,005	181	1,642	588	3,446	3,170	6,375	27,303
Seabass, white	5,113	----	19,026	7,128	220	----	2,061	15,999	3,376	26,816	46,512	28,951	155,202
Shark	----	----	965	----	----	----	787	----	169	432	1,227	1,640	5,220
Sheephead, California	----	----	150	----	160	----	150	711	442	687	651	----	2,951
Sierra	----	139	----	----	----	----	----	----	----	----	----	----	139
Swordfish	----	----	----	----	----	----	2,802	5,410	----	----	----	----	8,212
Tuna, albacore	----	----	----	----	----	26,075	3,410,997	3,311,201	567,058	27,784	----	----	7,343,115
Tuna, bluefin	----	----	----	----	----	----	11,333	172,999	223,616	9,055	13,910	----	430,913
Tuna, skipjack	251,975	480,728	83,016	512,600	3,363,205	840,391	1,922,328	1,506,887	1,230,938	2,697,614	2,251,577	1,097,183	16,238,442
Tuna, yellowfin	587,696	3,579,825	3,023,693	2,807,341	2,826,042	2,700,887	2,417,635	1,751,411	1,117,266	2,785,586	1,917,071	2,305,064	27,819,517
Whitefish, ocean	235	----	1,448	----	690	270	----	255	----	1,640	1,895	1,455	7,888
Yellowtail, California	819	510	3,087	----	706	----	----	3,533	12,899	15,561	9,383	909	47,407
Total pounds	865,445	4,079,660	3,158,785	3,340,463	6,221,660	3,573,722	7,808,456	6,795,412	3,176,689	5,599,382	4,281,378	3,473,712	52,374,764
SHIPMENTS:[1]													
Fish:													
Tuna, albacore	----	224,024	1,044,086	254,543	----	----	----	----	----	----	104,292	----	1,626,945
Tuna, bluefin	----	----	----	----	----	----	----	75,650	----	----	----	----	75,650
Tuna, skipjack	313,884	----	116,328	4,776	----	3,364,610	1,388,287	3,256,496	74,619	1,088,410	1,180,402	2,472,115	13,259,927
Tuna, yellowfin	1,848,593	----	2,067,545	726,099	623,772	1,266,953	748,091	3,364,910	257,398	930,207	501,180	898,352	13,233,100
Mollusk:													
Clam, jackknife	----	----	----	----	56	----	186	----	----	----	----	----	242
Mussel	----	----	----	----	315	----	400	765	650	100	212	----	2,442
Total pounds	2,162,477	224,024	3,227,959	985,418	624,143	4,631,563	2,136,964	6,697,821	332,667	2,018,717	1,786,086	3,370,467	28,198,306
Grand total	**3,204,822**	**4,388,890**	**6,478,584**	**4,462,495**	**6,921,561**	**8,355,387**	**10,153,758**	**13,877,894**	**4,698,110**	**8,603,335**	**6,202,505**	**6,931,599**	**84,278,940**

[1] For origin of shipments refer to Table 6.

TABLE 15

Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco[1]	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS:							
Fish:							
Anchovy	----	**229,570**	**3,787,512**	**54,130**	**3,640,361**	----	**7,711,573**
	----	$3,741	$54,162	$1,943	$50,237	----	$110,083
Barracuda, California	----	----	----	**154,371**	**519,229**	**35,779**	**709,379**
	----	----	----	$23,772	$78,300	$4,661	$106,733
Bonito, Pacific	----	----	**6**	**21,589**	**8,448,400**	**42,977**	**8,512,972**
	----	----	$1	$596	$215,433	$2,278	$218,308
Cabezon	**15**	**160**	**3,768**	**999**	----	**10**	**4,952**
	$1	$8	$216	$62	----	$1	$288
Cabrilla, spotted	----	----	----	----	**11,023**	**48**	**11,071**
	----	----	----	----	$1,750	$9	$1,759
Carp	----	**337,400**	----	----	**1,150**	----	**338,550**
	----	$15,283	----	----	$58	----	$15,341
Croaker, white	----	**4,058**	**238,138**	**1,039**	**643,461**	**2,468**	**889,164**
	----	$219	$12,311	$77	$25,719	$248	$38,574
Flounder	**202,620**	**88,538**	**18,760**	**5,419**	----	----	**315,337**
	$9,946	$4,595	$1,885	$452	----	----	$16,878
Flounder, arrowtooth	**50,214**	**10,350**	**95**	----	----	----	**60,659**
	$2,424	$386	$4	----	----	----	$2,814
Flyingfish	----	----	----	----	**32,802**	----	**32,802**
	----	----	----	----	$3,939	----	$3,939
Greenling, kelp	----	----	**153**	**728**	----	----	**881**
	----	----	$6	$44	----	----	$50
Grouper	----	----	----	----	**189,983**	**12,288**	**202,271**
	----	----	----	----	$41,055	$1,884	$42,939
Hake, Pacific	----	**3,245**	----	**30**	----	----	**3,275**
	----	$52	----	$1	----	----	$53
Halfmoon	----	----	----	----	**5,907**	----	**5,907**
	----	----	----	----	$1,478	----	$1,478
Halibut, California	**216**	**50,050**	**9,957**	**191,674**	**127,820**	**274,837**	**654,554**
	$43	$10,000	$2,452	$42,973	$33,118	$62,114	$150,700
Halibut, Pacific	**3,931**	**30**	----	----	----	----	**3,961**
	$963	$8	----	----	----	----	$971
Hardhead	----	**99,266**	----	----	----	----	**99,266**
	----	$19,554	----	----	----	----	$19,554
Herring, Pacific	**70**	**1,039,894**	**352,784**	----	**8,500**	----	**1,401,248**
	$7	$8,629	$22,085	----	$425	----	$31,146
Lingcod	**762,560**	**445,212**	**148,497**	**83,469**	**143**	**62**	**1,439,943**
	$52,766	$28,849	$14,048	$7,871	$16	$5	$103,555
Mackerel, jack	----	**20,809**	**3,650,940**	**14,794,841**	**79,139,714**	----	**97,606,304**
	----	$1,092	$85,107	$281,102	$1,661,935	----	$2,029,236
Mackerel, Pacific	----	----	**10,395**	**2,477,680**	**41,544,624**	**77,495**	**44,110,194**
	----	----	$269	$49,802	$901,518	$2,906	$954,495
Opaleye	----	----	----	----	**2,337**	----	**2,337**
	----	----	----	----	$352	----	$352
Perch	**60,951**	**23,422**	**12,967**	**17,160**	**3,658**	**87**	**118,245**
	$8,687	$3,902	$1,647	$3,839	$730	$10	$18,815
Pompano, Pacific	----	----	**1,256**	**25**	**10,144**	----	**11,425**
	----	----	$774	$6	$2,159	----	$2,939
Rock bass	----	----	----	----	**1,373**	**1,211**	**2,584**
	----	----	----	----	$260	$252	$512
Rockfish	**2,117,410**	**2,221,752**	**3,228,024**	**2,320,948**	**584,280**	**358,348**	**10,830,762**
	$90,286	$106,876	$167,663	$108,625	$73,749	$39,486	$586,685
Sablefish	**579,899**	**672,640**	**350,409**	**12,643**	**937**	----	**1,616,528**
	$45,578	$20,649	$18,501	$779	$115	----	$85,622
Salmon	**4,134,901**	**3,701,733**	**654,577**	**133,537**	**13,159**	----	**8,637,907**
	$2,138,077	$2,112,593	$364,405	$76,250	$6,567	----	$4,697,892
Sanddab	**103,514**	**346,566**	**111,984**	**568**	**312**	**20**	**562,964**
	$8,187	$22,145	$7,368	$34	$64	$4	$37,802
Sardine	----	----	**1,109,642**	**8,582,290**	**33,429,512**	**47,620**	**43,169,064**
	----	----	$33,845	$242,878	$865,824	$3,443	$1,145,990
Sculpin	----	----	----	**143**	**7,837**	**18,738**	**26,718**
	----	----	----	$29	$2,659	$4,766	$7,454
Sea bass, giant	----	----	----	**2,173**	**308,835**	**29,355**	**340,363**
	----	----	----	$287	$51,205	$4,744	$56,236
Seabass, white	----	**30,866**	**13,406**	**101,479**	**347,233**	**201,240**	**694,224**
	----	$9,146	$3,687	$31,204	$115,559	$56,992	$216,588
Shark	**1,136**	**130,246**	**38,977**	**98,615**	**270,426**	**84,572**	**623,972**
	$62	$4,942	$2,210	$8,325	$34,731	$9,283	$59,553
Sheephead, California	----	----	----	**1,076**	**3,852**	**7,674**	**12,602**
	----	----	----	$54	$268	$610	$932
Sierra	----	----	----	----	**643**	**139**	**782**
	----	----	----	----	$19	$17	$36
Skate	**101,270**	**130,195**	**64,905**	**2,624**	**323**	----	**299,317**
	$59	$1,522	$909	$130	$33	----	$2,653
Smelt	**296,882**	**58,168**	**33,465**	**962**	**101,744**	**44**	**491,265**
	$15,145	$5,701	$1,987	$83	$2,583	$5	$25,504

TABLE 15—Continued

Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco[1]	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS—Continued:							
Fish—Continued:							
Smelt, whitebait	307,247	15,994	12,611	----	----	----	335,852
	$21,352	$1,927	$1,946	----	----	----	$25,225
Sole, Dover	6,279,253	1,404,981	59,642	82,741	----	----	7,826,617
	$375,498	$73,200	$2,946	$4,965	----	----	$456,609
Sole, English	1,498,648	1,303,973	206,715	636,582	----	----	3,645,918
	$111,047	$94,668	$15,153	$39,786	----	----	$260,654
Sole, petrale	1,606,417	816,169	111,439	856,714	----	----	3,390,739
	$183,291	$96,880	$13,306	$95,609	----	----	$389,086
Sole, rex	604,264	414,553	70,455	119,557	----	----	1,208,829
	$42,056	$26,946	$3,601	$7,246	----	----	$79,849
Sole, sand	8,744	65,733	240	2,413	----	----	77,130
	$919	$6,672	$29	$265	----	----	$7,885
Sole, miscellaneous	435	2,995	11,012	7,898	1,713	10,431	34,484
	$21	$185	$1,036	$481	$135	$2,487	$4,345
Splittail	----	738	----	----	----	----	738
	----	$258	----	----	----	----	$258
Swordfish	----	----	451	63,352	259,340	45,712	368,855
	----	----	$180	$26,702	$115,666	$19,670	$162,218
Tuna, albacore	1,440,248	3,432,289	1,871,750	683,813	11,993,563	9,701,581	29,123,244
	$234,328	$615,751	$302,662	$108,863	$2,172,034	$1,755,016	$5,188,654
Tuna, bluefin	----	----	----	15	20,419,372	463,263	20,882,650
	----	----	----	$2	$2,646,350	$58,695	$2,705,047
Tuna, skipjack	----	----	----	----	49,164,418	16,238,442	65,402,860
	----	----	----	----	$5,432,668	$1,787,852	$7,220,520
Tuna, yellowfin	----	----	----	----	164,034,539	27,819,517	191,854,056
	----	----	----	----	$20,815,983	$3,613,755	$24,429,738
Turbot	7,594	60,904	----	2,869	----	----	71,367
	$750	$3,514	----	$147	----	----	$4,411
Wahoo	----	----	----	----	9,294	----	9,294
	----	----	----	----	$3,249	----	$3,249
Whitefish, ocean	----	----	----	45	17,231	7,915	25,191
	----	----	----	$3	$861	$613	$1,477
Yellowtail, California	----	----	----	7,789	300,686	72,294	380,769
	----	----	----	$547	$21,197	$6,007	$27,751
Miscellaneous	----	90	----	296	1,448	80	1,914
	----	$11	----	$27	$335	$4	$377
Miscellaneous (animal food)	2,760,891	187,185	9,717	819,340	----	----	3,777,133
	$55,216	$3,239	$153	$16,387	----	----	$74,995
Crustacean:							
Crab, market	10,573,741	1,065,519	16,039	56,028	----	----	11,711,327
	$1,699,198	$262,971	$4,629	$14,130	----	----	$1,980,928
Crab, rock	110	----	----	77,438	73,118	1,116	151,782
	----	----	----	$4,173	$7,926	$32	$12,131
Lobster, spiny	----	----	----	78,564	203,512	136,646	418,722
	----	----	----	$51,318	$142,925	$89,476	$283,719
Shrimp, bay	----	2,050	----	----	----	----	2,050
	----	$267	----	----	----	----	$267
Shrimp, ocean	2,002,709	----	----	----	----	----	2,002,709
	$190,055	----	----	----	----	----	$190,055
Mollusk:							
Abalone	----	24,108	683	3,145,494	1,002,531	380,950	4,553,766
	----	$4,390	$128	$462,373	$104,060	$35,992	$606,943
Clam, gaper	----	----	220	----	----	----	220
	----	----	$22	----	----	----	$22
Clam, jackknife	----	----	----	----	----	5,823	5,823
	----	----	----	----	----	$2,480	$2,480
Clam, Washington	1,976	----	----	----	----	----	1,976
	$279	----	----	----	----	----	$279
Octopus	418	2,447	75	17	148	----	3,105
	$8	$93	$8	$4	$32	----	$145
Oyster, eastern	----	105,726	----	----	----	----	105,726
	----	$5,107	----	----	----	----	$5,107
Oyster, giant Pacific	8,406,650	531,575	----	1,109,325	----	----	10,047,550
	$210,166	$58,154	----	$22,187	----	----	$290,507
Squid	----	----	3,686,284	2,571,065	4,026,590	1,852	10,285,791
	----	----	$129,020	$34,195	$68,049	$74	$231,338
Total pounds	43,914,934	19,081,199	19,897,950	39,381,567	420,907,225	56,080,634	599,263,509
Total value	$5,496,415	$3,634,125	$1,270,361	$1,770,628	$35,703,328	$7,565,871	$55,440,728

TABLE 15—Continued

Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco[1]	Monterey	Santa Barbara	Los Angeles	San Diego	Total
SHIPMENTS:[2]							
Fish:							
Halibut, Pacific	----	----	----	----	**6,840**	----	**6,840**
	----	----	----	----	$3,038	----	$3,038
Sablefish	----	----	----	----	**414,054**	----	**414,054**
	----	----	----	----	$90,719	----	$90,719
Salmon	**1,111**	----	----	----	**352,567**	----	**353,678**
	$403	----	----	----	$228,547	----	$228,950
Seabass, white	----	----	----	----	**2,776**	----	**2,776**
	----	----	----	----	$694	----	$694
Shad	----	**13,769**	----	----	**131,999**	----	**145,768**
	----	$27,538	----	----	$15,919	----	$43,457
Shark	----	----	----	----	**42,679**	----	**42,679**
	----	----	----	----	$6,486	----	$6,486
Smelt	----	----	----	----	**4,080**	----	**4,080**
	----	----	----	----	$734	----	$734
Steelhead	----	----	----	----	**1,563**	----	**1,563**
	----	----	----	----	$391	----	$391
Sturgeon	----	----	----	----	**34,489**	----	**34,489**
	----	----	----	----	$22,332	----	$22,332
Tuna, albacore	----	**3,020,455**	----	----	**25,643,607**	**1,626,945**	**30,291,007**
	----	$495,657	----	----	$4,346,591	$279,184	$5,121,432
Tuna, bigeye	----	**182,480**	----	----	**278,916**	----	**461,396**
	----	$39,014	----	----	$35,841	----	$74,855
Tuna, bluefin	----	**514,970**	----	----	**531,005**	**75,650**	**1,121,625**
	----	$74,671	----	----	$65,792	$9,456	$149,919
Tuna, oriental	----	**90,190**	----	----	**60,725**	----	**150,915**
	----	$14,494	----	----	$9,910	----	$24,404
Tuna, skipjack	----	**174,370**	----	----	**7,910,475**	**13,259,927**	**21,344,772**
	----	$23,470	----	----	$830,600	$1,461,244	$2,315,314
Tuna, yellowfin	----	**18,362,792**	----	----	**38,860,314**	**13,233,100**	**70,456,206**
	----	$3,239,197	----	----	$5,615,315	$1,752,062	$10,606,574
Miscellaneous	----	----	----	----	**215,030**	----	**215,030**
	----	----	----	----	$62,535	----	$62,535
Mollusk:							
Clam, jackknife	----	----	----	----	----	**242**	**242**
	----	----	----	----	----	$96	$96
Clam, Pismo	----	----	----	----	**940,400**	----	**940,400**
	----	----	----	----	$21,629	----	$21,629
Mussel	----	----	----	----	----	**2,442**	**2,442**
	----	----	----	----	----	$180	$180
Total pounds	**1,111**	**22,359,026**	----	----	**75,431,519**	**28,198,306**	**125,989,962**
Total value	$403	$3,914,041	----	----	$11,357,073	$3,502,222	$18,773,739
GRAND TOTAL POUNDS	**43,916,045**	**41,440,225**	**19,897,950**	**39,381,567**	**496,338,744**	**84,278,940**	**725,253,471**
GRAND TOTAL VALUE	$5,496,818	$7,548,166	$1,270,361	$1,770,628	$47,060,401	$11,068,093	$74,214,467

[1] Includes Sacramento area landings.
[2] For origin of shipments refer to Table 6.

TABLE 16

Value of Landings and Shipments by Port, Eureka Area, 1961

	Value	Pounds
EUREKA AREA TOTALS	**$5,496,818**	**43,916,045**
Eureka		
Salmon	$712,041	1,382,438
Market crab	453,602	2,822,666
Giant Pacific oyster	210,166	8,406,650
Albacore	150,943	927,739
Dover sole	147,409	2,465,036
Petrale sole	56,226	492,779
Ocean shrimp	50,042	527,318
English sole	32,628	440,337
Rockfish	19,186	458,614
Rex sole	17,851	256,480
Miscellaneous (animal food)	10,856	542,843
Sablefish	8,510	108,278
Flounder	6,365	129,646
Lingcod	6,257	90,420
Smelt	6,171	119,606
Whitebait	5,339	76,825
All other	8,561	176,647
Totals	$1,902,153	19,424,322
Crescent City		
Market crab	$1,049,358	6,529,921
Salmon	709,560	1,382,776
Ocean shrimp	51,260	540,153
Albacore	17,524	107,708
Lingcod	5,455	78,841
Whitebait	5,188	74,660
All other	6,957	88,198
Totals	$1,845,302	8,802,257
Fort Bragg		
Salmon	$684,047	1,304,377
Ocean shrimp	75,893	799,722
Dover sole	69,953	1,169,783
Albacore	65,206	400,775
Petrale sole	45,057	394,891
Market crab	41,060	255,513
Rockfish	28,309	643,968
Sablefish	23,043	293,176
Lingcod	19,240	278,050
English sole	17,758	239,654
Miscellaneous (animal food)	14,176	708,841
Rex sole	8,986	129,115
Smelt	5,475	109,404
All other	6,332	105,385
Totals	$1,104,535	6,832,654
Fields Landing		
Dover sole	$157,142	2,627,802
Market crab	83,518	519,714
Petrale sole	80,882	708,874
English sole	59,178	798,636
Rockfish	41,970	995,757
Miscellaneous (animal food)	30,184	1,509,207
Lingcod	21,800	315,039
Rex sole	15,020	215,806
Sablefish	13,979	177,850
Ocean shrimp	12,860	135,516
Whitebait	7,898	113,646
Salmon	7,398	14,338
All other	15,828	225,703
Totals	$547,657	8,357,888

TABLE 16—Continued

Value of Landings and Shipments by Port, Eureka Area, 1961

	Value	Pounds
Trinidad		
Market crab	$71,660	445,927
Salmon	25,246	51,584
All other	77	914
Totals	$96,983	498,425
All other ports		
All other	$188	499
Totals	$188	499

TABLE 17

Value of Landings and Shipments by Port,[1] San Francisco Area, 1961

	Value	Pounds
SAN FRANCISCO AREA TOTALS	**$7,548,166**	**41,440,225**
San Francisco		
Yellowfin tuna	$3,239,197	18,362,792
Albacore	927,221	5,426,052
Salmon	404,093	708,066
Market crab	161,955	656,219
Rockfish	87,647	1,818,510
Bluefin tuna	74,671	514,970
English sole	69,268	954,103
Petrale sole	65,741	553,839
Dover sole	48,478	930,480
Bigeye tuna	39,014	182,480
Shad	27,538	13,769
Skipjack	23,470	174,370
Rex sole	18,738	288,280
Sanddab	18,416	288,206
Sablefish	17,248	561,845
Lingcod	16,934	261,325
Oriental tuna	14,494	90,190
White seabass	8,808	29,725
California halibut	7,470	37,388
Sand sole	5,898	58,108
All other	21,095	813,626
Totals	$5,297,394	32,724,343
Bodega Bay		
Salmon	$797,512	1,397,428
Market crab	55,370	224,352
English sole	13,193	181,727
Petrale sole	8,793	74,076
Dover sole	8,216	157,693
All other	23,206	336,082
Totals	$906,290	2,371,358
Sausalito		
Salmon	$399,957	700,818
Albacore	55,043	306,818
Market crab	8,543	34,614
All other	591	13,656
Totals	$464,134	1,055,906
Point Reyes		
Salmon	$257,433	451,083
Giant Pacific oyster	49,714	454,421
Petrale sole	22,100	186,185
Market crab	18,688	75,722
Rockfish	13,753	294,456
English sole	12,112	166,835
Lingcod	9,770	150,775
Dover sole	8,345	160,173
All other	14,876	278,559
Totals	$406,791	2,218,209
Oakland		
Salmon	$171,345	300,237
Albacore	124,572	694,383
Dover sole	8,161	156,635
All other	6,317	49,291
Totals	$310,395	1,200,546
Princeton		
Salmon	$72,898	127,735
Market crab	13,165	53,343
All other	5,305	30,551
Totals	$91,368	211,629

TABLE 17—Continued

Value of Landings and Shipments by Port,[1] San Francisco Area, 1961

	Value	Pounds
Tomales Bay		
Giant Pacific oyster	$8,440	77,154
Pacific herring	8,107	976,810
Eastern oyster	5,107	105,726
All other	4,505	38,112
Totals	$26,159	1,197,802
Clear Lake		
Hardhead	$17,669	89,695
Carp	7,975	176,050
Totals	$25,644	265,745
Berkeley		
Salmon	$9,355	16,366
All other	337	1,495
Totals	$9,692	17,861
Turlock		
Carp	$5,369	118,522
All other	1,886	9,601
Totals	$7,255	128,123
All other ports		
All other	$3,044	48,703
Totals	$3,044	48,703

[1] Includes Sacramento area landings.

TABLE 18

Value of Landings by Port, Monterey Area, 1961

	Value	Pounds
MONTEREY AREA TOTALS	**$1,270,361**	**19,897,950**
Monterey		
Rockfish	$160,347	3,122,903
Squid	129,002	3,685,784
Albacore	110,808	685,270
Salmon	69,869	125,505
Jack mackerel	54,708	2,346,241
Anchovy	40,191	2,810,552
English sole	14,612	199,342
Sardine	13,004	426,337
Petrale sole	12,045	100,876
Lingcod	8,422	89,027
Sablefish	7,918	149,966
Sanddab	6,519	99,080
White croaker	6,338	122,601
All other	15,241	270,774
Totals	$649,024	14,234,258
Moss Landing		
Salmon	$202,507	363,763
Albacore	190,691	1,179,289
Jack mackerel	30,366	1,303,273
Sardine	20,841	683,305
Pacific herring	20,330	324,754
Anchovy	13,910	972,710
Sablefish	5,979	113,242
Rockfish	5,174	69,362
All other	15,196	184,745
Totals	$504,994	5,194,443
Santa Cruz		
Salmon	$92,029	165,309
All other	24,314	303,940
Totals	$116,343	469,249

TABLE 19

Value of Landings by Port, Santa Barbara Area, 1961

	Value	Pounds
SANTA BARBARA AREA TOTALS	**$1,770,628**	**39,381,567**
Morro Bay		
Abalone	$243,343	1,597,786
Albacore	91,887	577,181
Rockfish	60,189	1,214,882
Sardine	56,400	1,992,950
Petrale sole	50,101	448,937
Salmon	31,619	54,773
Giant Pacific oyster	22,187	1,109,325
Jack mackerel	19,050	1,002,654
Market crab	11,160	44,252
Miscellaneous (animal food)	8,981	449,073
Lingcod	7,393	78,402
White seabass	6,137	19,958
Rex sole	5,508	90,888
All other	18,369	245,064
Totals	$632,324	8,926,125
Port Hueneme		
Jack mackerel	$262,052	13,792,185
Sardine	186,152	6,577,810
Pacific mackerel	49,379	2,456,660
Squid	33,095	2,488,350
Abalone	23,032	174,558
Swordfish	9,342	22,164
All other	10,756	103,303
Totals	$573,808	25,615,030
Santa Barbara		
Abalone	$159,457	1,133,220
Rockfish	45,179	1,042,025
Petrale sole	42,829	383,771
Spiny lobster	39,179	59,980
California halibut	36,980	164,944
English sole	34,889	558,231
California barracuda	20,109	130,578
White seabass	19,189	62,402
Swordfish	15,797	37,479
Miscellaneous (animal food)	7,337	366,831
All other	15,711	304,224
Totals	$436,656	4,243,685
Avila		
Salmon	$44,277	78,158
Albacore	16,209	101,814
Abalone	6,147	40,363
All other	12,715	118,893
Totals	$79,348	339,228
San Simeon		
Abalone	$27,135	178,167
Totals	$27,135	178,167
Ventura		
Spiny lobster	$12,027	18,412
All other	3,379	20,481
Totals	$15,406	38,893
All other ports		
All other	$5,951	40,439
Totals	$5,951	40,439

TABLE 20

Value of Landings and Shipments by Port, Los Angeles Area, 1961

	Value	Pounds
LOS ANGELES AREA TOTALS	**$47,060,401**	**496,338,744**
Terminal Island		
Yellowfin tuna	$26,400,937	202,655,603
Albacore	6,469,824	37,367,697
Skipjack	6,263,221	57,074,467
Bluefin tuna	2,611,710	20,175,436
Jack mackerel	1,395,398	66,447,522
Sardine	765,224	29,545,346
Pacific mackerel	731,682	33,718,042
Pacific bonito	159,096	6,239,066
Squid	41,754	2,470,625
Bigeye tuna	35,841	278,916
Pismo clam	17,042	740,960
California yellowtail	11,396	161,649
Oriental tuna	9,910	60,725
Shark	6,516	42,804
All other	3,005	163,539
Totals	$44,922,556	457,142,397
San Pedro		
Bluefin tuna	$100,409	774,760
White seabass	95,977	288,391
Sardine	87,796	3,389,809
California barracuda	76,211	505,378
Spiny lobster	67,316	95,851
Swordfish	60,303	135,209
Pacific mackerel	58,711	2,705,598
Jack mackerel	57,290	2,728,093
Rockfish	57,284	447,581
Giant sea bass	50,978	307,469
Grouper	40,824	188,912
Anchovy	39,138	2,836,119
Yellowfin tuna	30,298	238,756
Albacore	27,790	153,450
Squid	23,616	1,397,415
White croaker	21,472	545,852
California halibut	18,761	72,408
Pacific bonito	13,643	535,031
Shark	10,997	90,367
California yellowtail	9,219	130,772
Salmon	6,547	13,119
All other	15,028	129,208
Totals	$969,608	17,709,548
Los Angeles		
Salmon	$228,547	352,567
Sablefish	90,719	414,054
Sturgeon	22,332	34,489
Shad	15,919	131,999
All other	71,432	428,481
Totals	$428,949	1,361,590
Wilmington		
Jack mackerel	$156,711	7,462,407
Pacific mackerel	79,553	3,666,028
Pacific bonito	42,446	1,664,555
Sardine	12,252	473,057
Anchovy	6,075	440,197
All other	5,345	163,606
Totals	$302,382	13,869,850

TABLE 20—Continued

Value of Landings and Shipments by Port, Los Angeles Area, 1961

	Value	Pounds
Newport Beach		
Abalone	$102,310	985,912
Jack mackerel	52,534	2,501,600
Swordfish	51,009	114,369
Pacific mackerel	31,501	1,451,652
Shark	22,168	166,542
Spiny lobster	15,597	22,209
California halibut	9,939	38,358
All other	12,640	120,899
Totals	$297,698	5,401,541
Santa Monica		
White seabass	$14,295	42,954
Spiny lobster	13,016	18,533
All other	16,310	292,529
Totals	$43,621	354,016
Long Beach		
Albacore	$17,875	98,703
Rockfish	10,589	78,182
Spiny lobster	9,579	13,640
All other	5,002	133,714
Totals	$43,045	324,239
San Clemente		
Spiny lobster	$31,839	45,336
Totals	$31,839	45,336
Redondo Beach		
Rock crab	$7,623	70,322
All other	6,984	31,445
Totals	$14,607	101,767
All other ports		
All other	$6,096	28,460
Totals	$6,096	28,460

TABLE 21

Value of Landings and Shipments by Port, San Diego Area, 1961

	Value	Pounds
SAN DIEGO AREA TOTALS	**$11,068,093**	**84,278,940**
San Diego		
Yellowfin tuna	$5,365,817	41,052,617
Skipjack	3,249,096	29,498,369
Albacore	2,033,774	11,326,171
Bluefin tuna	68,151	538,913
California halibut	60,840	269,202
Spiny lobster	59,337	90,619
White seabass	55,603	196,337
Abalone	35,992	380,950
Rockfish	32,875	298,697
Swordfish	19,670	45,712
Shark	8,988	81,883
California yellowtail	5,891	70,896
All other	30,106	280,302
Totals	$11,026,140	84,130,668
La Jolla		
Spiny lobster	$21,823	33,327
All other	2,525	23,136
Totals	$24,348	56,463
Oceanside		
Spiny lobster	$4,548	6,946
All other	4,277	29,792
Totals	$8,825	36,738
All other ports		
All other	$8,780	55,071
Totals	$8,780	55,071

TABLE 22

Statewide Commercial Party Boat Catch by Species

(Not including anchored barges)

1936-1940,[1] 1947-1961

Species	Number of fish									
	1936	1937	1938	1939	1940	1947	1948	1949	1950	1951
Barracuda, California	492,536	598,454	314,256	663,498	704,520	677,449	384,056	366,423	256,367	269,545
Bass, kelp and sand	315,582	226,397	435,917	426,772	411,490	683,064	630,617	796,959	619,397	781,609
Bonito, Pacific	17,916	40,654	14,373	17,326	9,983	36,496	14,519	5,372	2,359	14,475
Cabezon	2,287	2,143	4,578	2,323	3,248	9,886	14,590	14,125	15,971	18,029
Halibut, California	34,961	22,359	17,494	39,736	55,838	104,436	143,462	104,639	85,935	59,295
Lingcod	2,532	3,885	4,893	6,436	6,785	22,011	24,406	26,131	23,868	24,052
Mackerel, jack	1,303	1,923	3,462	1,222	10,109	4,505	2,351	2,932	557	202
Mackerel, Pacific	70,586	59,281	87,959	160,962	119,320	148,041	203,012	95,158	66,969	47,188
Rockfish	204,627	243,125	239,312	209,453	301,355	193,377	410,271	570,637	679,164	721,808
Salmon	197	1,005	1,960	3,501	7,080	5,018	11,209	23,057	56,337	71,970
Sculpin	14,658	13,164	21,063	17,866	15,098	26,062	52,554	37,030	53,419	35,721
Seabass, white	11,046	11,244	14,093	30,218	15,979	20,724	24,078	65,545	54,718	44,367
Sheephead, California	8,676	9,279	13,188	11,517	11,231	13,004	17,261	15,440	14,281	20,416
Tuna, albacore	453	1,346	3,833	8,816	142	11,445	15,414	22,692	118,087	75,924
Tuna, bluefin	2,920	4,020	11,927	9,909	6,878	2,194	104	1,941	27	7,142
Whitefish, ocean	3,069	3,547	4,597	7,672	4,223	5,160	14,124	14,576	14,925	8,828
Yellowtail, California	90,899	61,054	42,556	25,955	95,204	6,948	13,028	17,710	6,971	23,721
All others	39,220	41,254	46,147	81,022	94,355	100,612	134,963	159,427	121,061	126,352
Total number of fish	**1,313,473**	**1,344,139**	**1,281,608**	**1,724,204**	**1,872,838**	**2,070,432**	**2,110,019**	**2,339,794**	**2,190,413**	**2,350,644**
Number of angler days	166,784	201,241	201,685	231,328	250,459	359,436	407,757	469,915	544,264	556,949
Number of anglers[2]										

[1] Figures for World War II years, 1941-1946, not available.
[2] Number of anglers are not recorded for years prior to 1960. Figures published in Fish Bulletin No. 117 were estimates.

TABLE 22—Continued

Statewide Commercial Party Boat Catch by Species

(Not including anchored barges)

1936-1940,[1] 1947-1961

Species	Number of fish									
	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Barracuda, California	336,862	170,550	282,552	154,962	87,603	577,184	782,723	1,195,585	755,408	391,884
Bass, kelp and sand	536,075	711,400	876,667	497,343	470,362	609,071	653,671	428,426	478,656	613,604
Bonito, Pacific	7,649	6,321	70,078	22,409	61,404	258,555	422,563	776,386	1,199,919	849,426
Cabezon	10,847	9,650	13,132	12,366	18,195	14,479	9,909	5,329	2,516	2,639
Halibut, California	34,158	34,290	59,674	35,802	21,661	10,795	16,192	25,365	48,310	108,011
Lingcod	17,389	13,011	22,940	29,113	37,649	38,012	39,801	31,206	28,232	23,466
Mackerel, jack	4,395	196,280	19,407	39,473	23,493	6,878	27,867	11,820	8,537	28,891
Mackerel, Pacific	76,568	61,467	315,037	151,018	121,136	151,960	136,607	88,952	79,370	113,988
Rockfish	705,761	696,475	1,149,367	1,737,707	2,036,708	1,395,151	1,561,132	1,177,979	1,015,673	898,641
Salmon	86,472	98,723	119,911	128,978	114,505	44,701	52,676	55,945	37,941	42,965
Sculpin	39,068	28,952	33,462	28,613	36,558	13,473	13,743	11,477	15,111	26,672
Seabass, white	41,043	27,603	41,588	30,103	19,755	19,030	34,039	10,593	15,697	14,082
Sheephead, California	16,481	17,349	21,499	14,102	14,789	15,105	18,120	17,146	11,541	15,210
Tuna, albacore	187,267	23,363	20,098	78,688	65,814	41,540	6,482	39	76,075	184,891
Tuna, bluefin	145	4,276	966	8,179	34,187	6,428	884	1,330	97	2,268
Whitefish, ocean	10,003	4,963	9,952	9,508	7,951	4,389	6,143	5,608	5,850	6,647
Yellowtail, California	59,263	27,702	40,872	36,468	29,198	242,686	123,384	457,350	254,969	42,367
All others	136,687	147,783	177,335	99,051	62,027	50,148	44,939	28,039	56,132	87,981
Total number of fish	**2,306,133**	**2,280,158**	**3,274,537**	**3,113,883**	**3,262,995**	**3,499,585**	**3,950,880**	**4,328,575**	**4,090,034**	**3,453,633**
Number of angler days	588,087	502,146	532,190	496,286	523,063	536,175	515,152	557,154	516,255	495,805
Number of anglers[2]									637,498	593,916

[1] Figures for World War II years, 1941-1946, not available.
[2] Number of anglers are not recorded for years prior to 1960. Figures published in Fish Bulletin No. 117 were estimates.

TABLE 23

Recorded Catch of Live Bait for Saltwater Sportfishing, 1961

Species	Thousands of pounds[1]
Anchovy	11,825
Sardine, adult	136
Sardine, juvenile	3
Miscellaneous[2]	15
Total pounds	11,979

[1] Using a conversion factor of 12.5 pounds per live bait scoop, weights are estimated from voluntary records submitted by 14 boats. The weight of a scoop of live bait varies between 10 and 15 pounds. The records represent almost all the live bait landings, however, they should be regarded as minimal.

[2] Consists primarily of queenfish and white croaker.

CATCH LOCALITIES FOR DOVER SOLE, *MICROSTOMUS PACIFICUS* (LOCKINGTON), LANDED IN CALIFORNIA, 1950 THROUGH 1959

E. A. BEST

Marine Resources Operations
California Department of Fish and Game

INTRODUCTION

World War II technological advances in freezing fillets transposed Dover sole from a discarded scrap fish to California's most important flatfish. This rapid transposition took place between 1943 and 1948. Credit for developing Dover sole as an acceptable fish for the fillet trade rests with Oregon processors. The Oregon fishery began in 1941 and reached a magnitude of 6.4 million pounds by 1943 (Cleaver, 1951).

With the momentum provided by the Oregon industry, the fishery moved south, and in 1943 Dover sole were recorded for the first time in California landings. Landings increased slowly through 1947 and in 1948 jumped to 7.2 million pounds. Hagerman (1952) reported on the early phase of this fishery. Stimulated by increased purchasing by the armed forces during the Korean conflict, Dover sole catches peaked at 11.7 million pounds in 1952. This represented 52 percent of the total flatfish landings in California. From 1950 to 1959 the annual harvest averaged 8.9 million pounds. The 7.3 million pounds caught in 1959 was the lowest for this period; yet it was 39 percent of all flatfish taken (Figure 1).

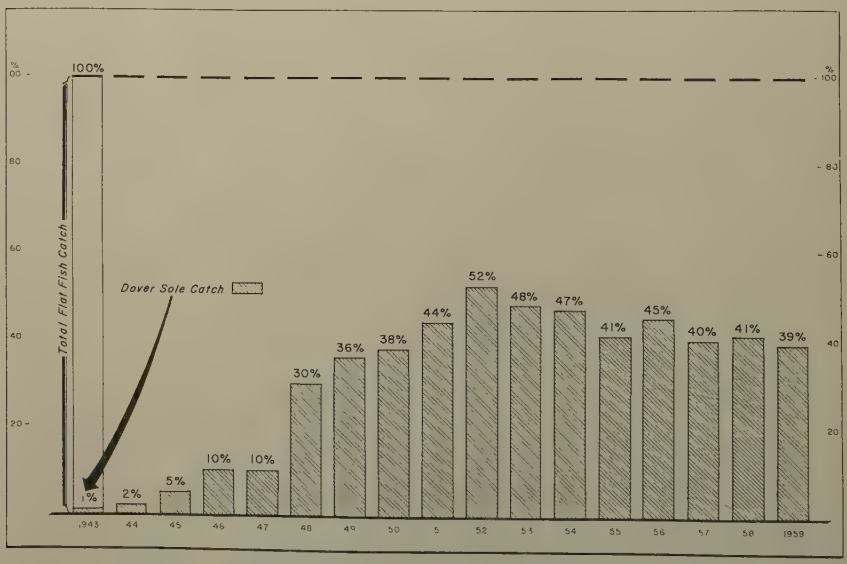


FIGURE 1. Proportion of Dover sole landings to total flatfish landings, 1943 through 1959.

FISHERY

Dover sole inhabit relatively deep areas of the continental slope. Otter trawls are the only practical way to harvest them. Fishing takes place in depths ranging from a little less than 100 fathoms during summer to over 400 fathoms in late winter and early spring.

Vessels average about 60 feet in overall length but vary from about 45 to 90 feet and normally require a three- or four-man crew. Nearly all are typical Pacific coast combination-type construction with deck house forward and the after deck clear for working gear. Several annually switch to albacore or sardine fishing, or become salmon pick-up vessels at the appropriate season and return to the trawl fishery for the remainder of the year. In recent years numerous unemployed sardine purse-seine vessels have become year-round trawlers (Figure 2). An excellent description of gear and electronic aids was given by Alverson (1957).

FIGURE 2. Former sardine purse-seine vessel rigged for otter trawling.
Photo by Paul H. Reed, July 1962.

Occasionally Dover sole are landed on a daily basis; however, in northern California, trips usually last 4 or 5 days while in central California the standard is 2 or 3 days. Fish are stowed below decks in pens with adequate ice to prevent spoilage. The vessels do not have shelves in the pens to prevent crushing fish. Day fish (those to be sold the day caught) are boxed aboard the vessel and landed without ice. Few trawlers are equipped with refrigeration. That used is merely for chilling the fish-hold to minimize ice melting and is not adequate to freeze catches at sea.

REPORTING THE CATCH

California otter trawlers are required by law to keep logbooks of their fishing activities. For reporting fishing localities, they are supplied charts with the offshore area divided into numbered blocks measuring 10 minutes of longitude by 10 minutes of latitude (Figures 3, 4). Trawler logs combined with landing receipts are used to determine fishing location and species caught. For a complete description of this technique, see Clark (1935) and California Department of Fish and Game (1952).

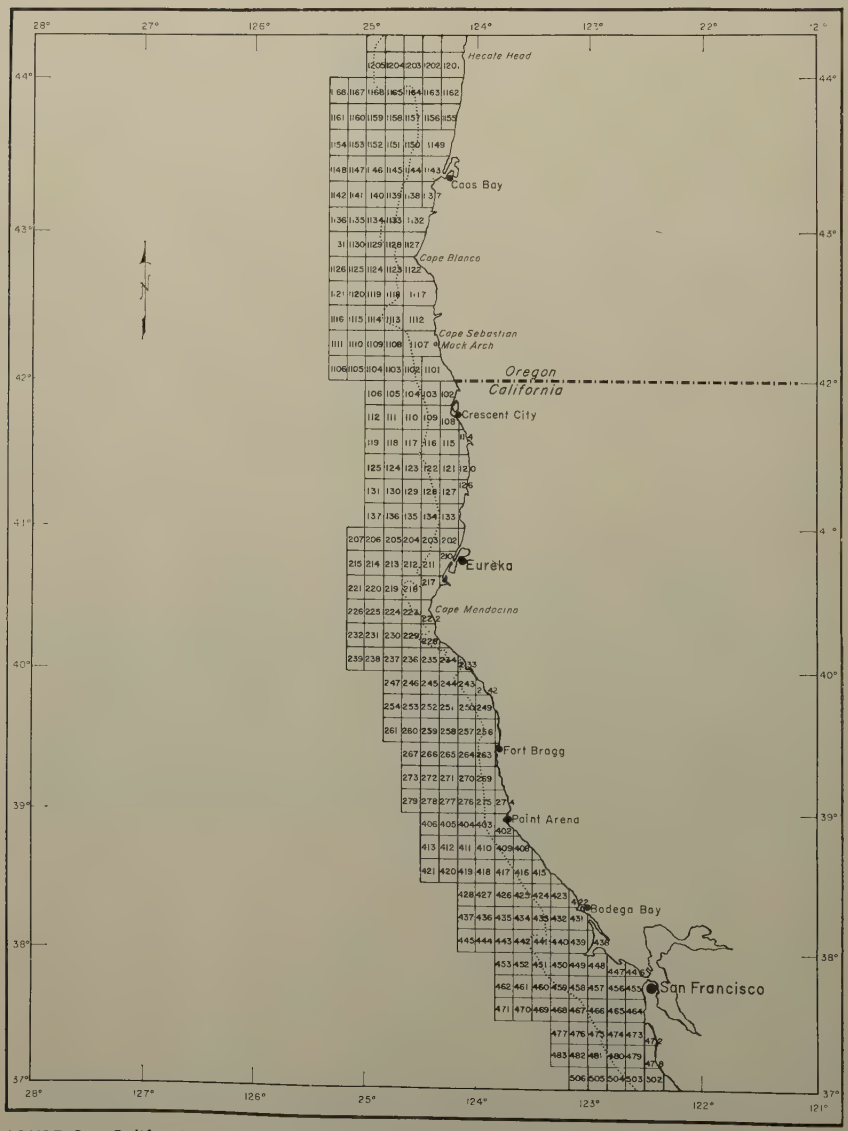


FIGURE 3. California Department of Fish and Game fishing chart for northern California and southern Oregon.

FIGURE 4. California Department of Fish and Game fishing chart for central California.

These data, summarized monthly and yearly, provide information about the fishery and are particularly useful in delineating new fishing areas and determining areas not actively fished.

The Dover sole fleet is far ranging. Its sphere of operations, as indicated by 1950 to 1959 catch locality summaries, may be anywhere from central Oregon to central California (Table 1). When averaged for

TABLE 1

Dover Sole Catch Localities by General Areas, 1950 Through 1959.

(Landings in thousands of pounds)

General area	Block numbers	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Coos Bay, Oregon	1127–1205	535	29	126	39	335	283	234	192	302	259
Mack Arch, Oregon	1101–1126	786	586	1,049	1,049	1,574	699	790	790	836	931
Eureka	102– 226	7,417	7,116	9,066	6,231	4,895	4,993	3,960	4,293	3,951	3,670
Fort Bragg	228– 279	687	756	1,125	1,159	1,704	1,494	2,082	1,953	1,416	1,233
Bodega Bay	402– 445	118	109	223	239	408	260	58	87	1,191	846
San Francisco	446– 483	5	19	103	152	978	448	1,127	606	355	372
Monterey	502– 564	0	6	56	35	36	6	14	10	1	2
Morro Bay	602– 648	0	0	0	0	0	2	3	1	1	14
Santa Barbara	652– 693	0	0	0	0	0	0	*0	0	0	0
Total		9,548	8,621	11,748	8,904	9,930	8,185	8,268	7,932	8,053	7,327

* Landings totaled 200 pounds. An important trawl fishery has developed at Santa Barbara since 1959.

1950-1954 and 1955-1959, these catch locality data show northern California's continued domination of the fishery but also indicate gradually increasing importance of Dover sole to central California ports (Figures 5, 6, 7, 8).

Monthly summaries of trawl landings reveal very clearly the seasonal character of the Dover sole fishery. Less than 1 percent of the total annual Dover sole landings are made in both January and February. With the coming of spring and improved weather, landings increase until they peak in midsummer. About one-half of the annual catch is landed during June, July, and August. A decline sets in as winter approaches and stormy weather prevails in the offshore fishing areas.

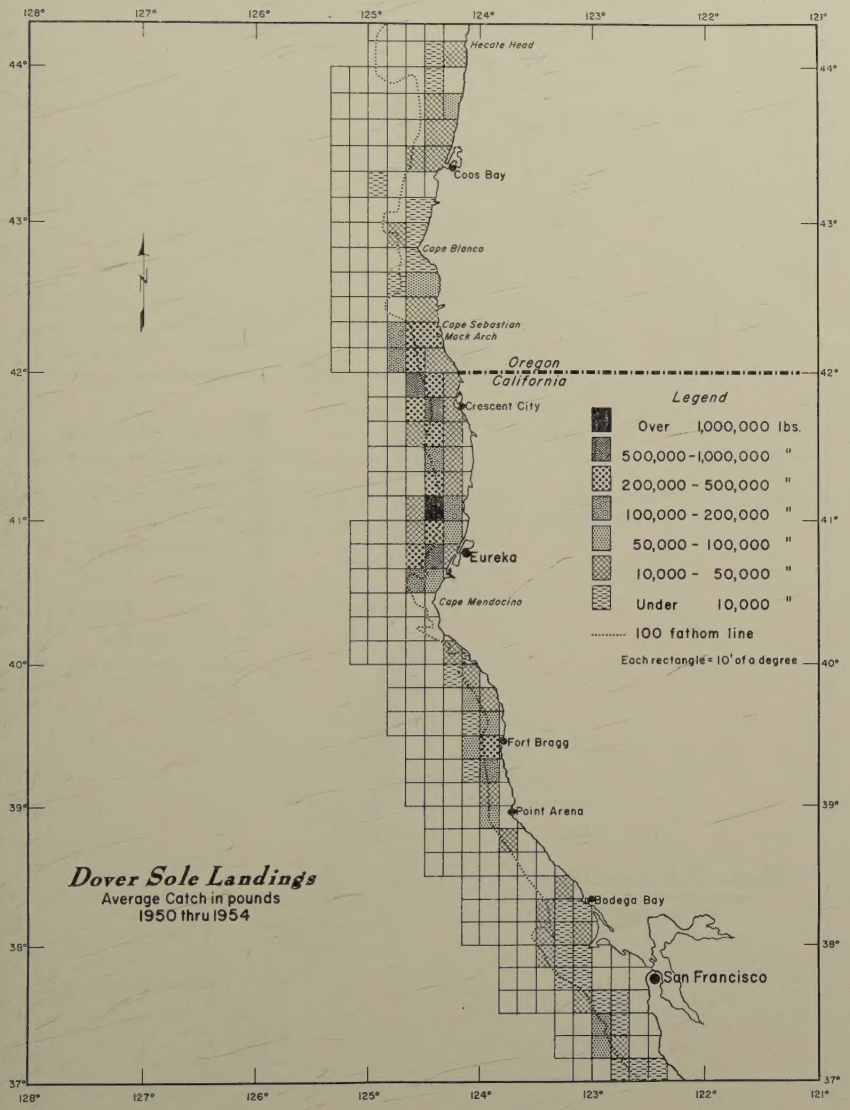


FIGURE 5. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1950 through 1954.

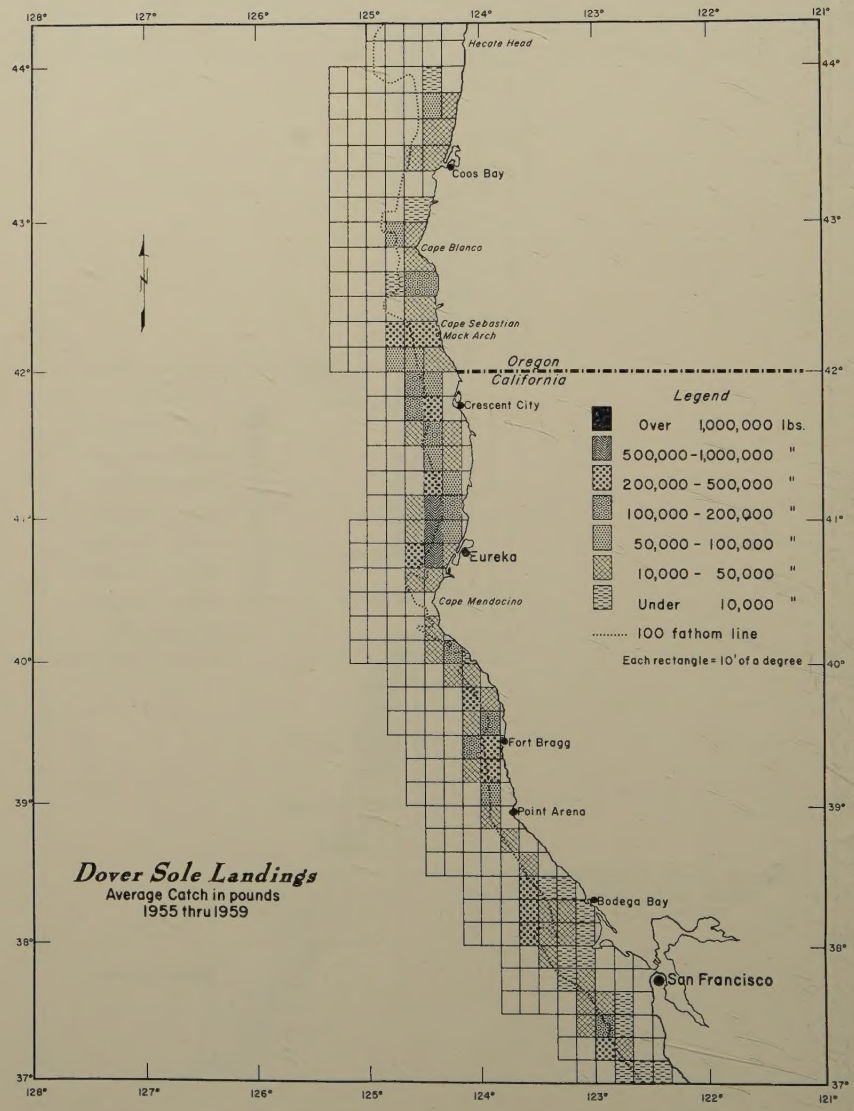


FIGURE 6. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1955 through 1959.

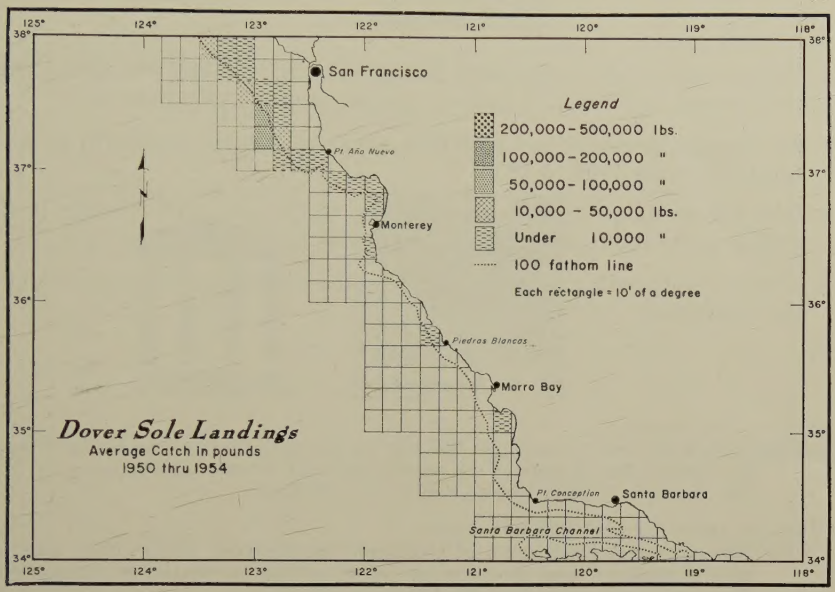


FIGURE 7. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1950 through 1954.

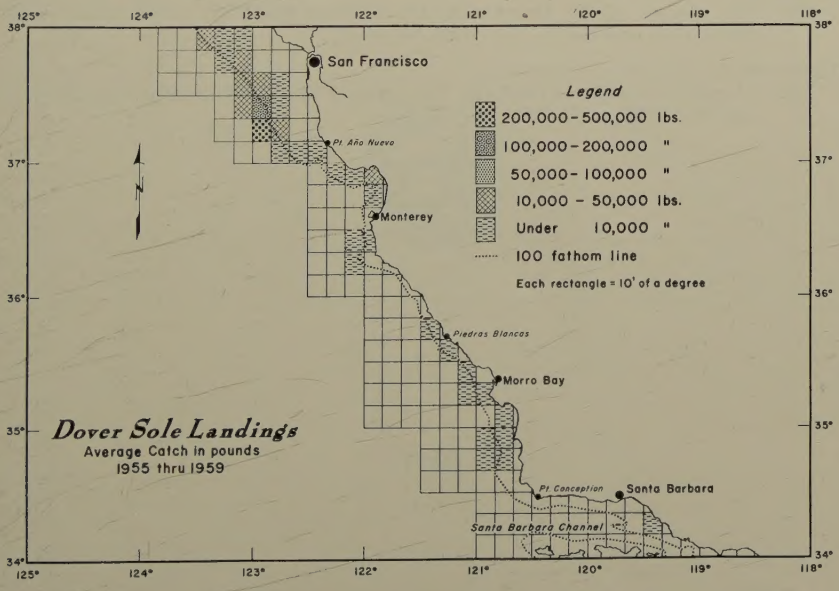


FIGURE 8. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1955 through 1959.

SUMMARY

1. Technological advances made during the early 1940's changed Dover sole from a trash fish to California's most important flatfish.
2. Dover sole landings in California averaged nearly 9 million pounds annually from 1950 to 1959.
3. The fishery is primarily in northern California with central California ports landing increased quantities in recent years.
4. Dover sole trawling is primarily a summer fishery with little activity during winter.

REFERENCES

Alverson, Dayton L.
1959. Trends in trawling methods and gear on the west coast of the United States. *In* Modern fishing gear of the world, edited by Hilmar Kristjonsson, p. 317-320. London, Fishing News (Books) Ltd., 607 p.

California Department of Fish and Game
1952. The commercial fish catch of California for the year 1950, with a description of methods used in collecting and compiling the statistics. Calif. Dept. Fish and Game, Fish Bull. 86, 120 p.

Clark, G. H.
1935. Logs on California trawlers. Calif. Div. Fish and Game, Fish Bull. 44, p. 37-40.

Cleaver, F. C.
1951. Fishery statistics of Oregon. Oregon Fish Comm., Contrib. no. 16, 176 p.

Hagerman, Frederick B.
1952. The biology of the Dover sole, *Microstomus pacificus* (Lockington). Calif. Dept. Fish and Game, Fish Bull. 85, 48 p.

Pacific Marine Fisheries Commission
1962. Monthly otter-trawl landings. Pac. Mar. Fish. Comm., 14th Ann. Rept. for the year 1961, p. 81-120.

o

82102 3-63 3,500 *printed in* CALIFORNIA STATE PRINTING OFFICE